



# Pediatric Prehospital Protocols

*January 2008*



*Illinois Emergency Medical Services for Children*



Illinois Emergency Medical Services for Children is a collaborative program between the Illinois Department of Public Health and Loyola University Medical Center



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# Illinois Emergency Medical Services for Children Pediatric Prehospital Protocol Manual 2008

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*This manual was completed under the direction of the Illinois EMSC Advisory Board*

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# PEDIATRIC PREHOSPITAL PROTOCOLS

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# Acknowledgements

This document contains protocols and related resources which were originally developed by Illinois EMSC in 1997. During 2006-2007, an extensive review and revision of this document was undertaken by the EMSC Prehospital Committee. In addition, the State EMS Protocols Committee critically reviewed the BLS Protocols and forwarded recommendations which were incorporated into the protocols.

The Illinois EMSC Advisory Board gratefully acknowledges the commitment and dedication of the EMSC Prehospital Committee in revising the guidelines and protocols that comprise this document. Their contributions of countless hours of work and collaboration have led to this valuable resource and assists Illinois EMSC in striving toward the goal of improving pediatric emergency care within our state.

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Special thanks to Ramona Rendon, EMSC Administrative Secretary, for her dedicated administrative and editorial assistance in the production of this manual.

## **ILLINOIS EMERGENCY MEDICAL SERVICES FOR CHILDREN POSITION STATEMENT PEDIATRIC PREHOSPITAL PROTOCOLS**

Several key prehospital elements in local Emergency Medical Services systems facilitate the delivery of quality field care to children:

- Appropriate education of prehospital providers in the assessment and treatment of acute pediatric illness and injury.
- Standardized and appropriate equipment and medications for the delivery of care to the pediatric population.
- Uniform pediatric-specific treatment protocols.

Prehospital treatment protocols for adult patients are frequently used in EMS systems. Within the State of Illinois there exists considerable variation in treatment protocols based upon local EMT scope of practice, availability of regional resources and differences in medical opinion regarding the delivery of Emergency Medical Responder (EMR), BLS, ILS and ALS care in the prehospital environment. In 1997, the Emergency Medical Services and Trauma Center Code, adopted by the Illinois Department of Public Health, was revised to mandate pediatric specific treatment protocols.

Illinois EMSC strongly endorses the concept of standardized prehospital patient care for the pediatric population at the Emergency Medical Responder (EMR), BLS, ILS, and ALS levels. While most BLS and Emergency Medical Responder field interventions are considered relatively uncomplicated and straightforward, guidelines improve the continuity, quality and consistency of patient care.

### **Treatment Protocol Guidelines:**

1. Within the context of all federally funded EMSC projects, the pediatric population is defined as inclusive of all patients up to the age of 21 years. In this document, pediatric patients are defined as age 15 years and younger, consistent with the Emergency Medical Services and Trauma Center Code adopted by the Illinois Department of Public Health. Other terms commonly applied to the pediatric population include: "newly born" (under 24 hours), "neonates" (1-28 days) and "infant" (1-12 months).
2. Emergency Medical Responder, BLS, ILS, and ALS interventions should be clearly identified within each protocol.
3. Special considerations for pediatric care should be identified within each protocol where appropriate.
4. Drug dosages should be weight-based and given per kilogram. Inconsistencies exist within the prehospital environment secondary to the relatively low volume and exposure to pediatric patients resulting in inaccuracies and possible under- or over-treatment. Therefore, a validated "length-based" or color coded resuscitation tool is highly recommended. Have available precalculated drug dosing forms based on drug concentrations carried within the EMS system. In addition, standardized weight charts should be readily available to the prehospital provider identifying age adjusted vital sign parameters and appropriate sizing of endotracheal tubes.
5. Intravenous fluids administered in the prehospital environment should be a balanced crystalloid solution.
6. A triage mechanism for the rapid and appropriate treatment and transport of "critical patients" (i.e., multiple trauma) to the "most" appropriate facility must be identified.

7. The Pediatric Glasgow Coma Scale should be utilized by ALS, ILS, and BLS personnel.

**Protocol Recommendations:**

Protocols for the treatment and transport of the critically ill and/or injured child should exist in a "freestanding" format isolated from adult protocols or clearly identified in a general protocol, i.e., using the EMSC teddy bear logo to highlight pediatric considerations.

The following areas have been identified as requiring specific treatment protocols:

1. **PEDIATRIC INITIAL ASSESSMENT** - A foundation for all pediatric patient interactions, this protocol should reinforce the need for consistent, methodical patient assessment. The protocol should reinforce the following:
  - Importance of rapid BLS interventions (i.e., CPR) specifically airway support.
  - Age appropriate signs and symptoms of pediatric respiratory distress.
  - Age appropriate airway interventions including the use of "blow-by" oxygen administration.
  - Indicators of adequate ventilation and perfusion.
  - Age appropriate immobilization of the pediatric trauma patient.
  - Recognition of and monitoring for imminent life-threats.
  - Unique assessment considerations and emergent care requirements of children with special health care needs (CSHCN), including those who are technologically dependent. Emphasize the appropriate inclusion of parents/primary caregivers.
2. **INITIAL MEDICAL CARE/ASSESSMENT** – Address the initial assessment and medical care provided to the pediatric patient, including an assessment of scene safety and ensuring body substance isolation. Commonly referred to as "routine medical care" in adult protocols.
3. **NEONATAL RESUSCITATION** - Must incorporate the specific heart rate parameters and requisite interventions according to the American Heart Association recommendations.
4. **PEDIATRIC AED** – Treatment must be in accordance with the Department approved Pediatric AED protocol and in accordance with American Heart Association guidelines. AED's can be used in children age 1-8 years. Use of pediatric pads and cables are preferable; however adult pads can be used in an anterior/posterior application.
5. **PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS** – Pay special attention to the differentiation between local reaction (hives), respiratory distress and cardio-respiratory compromise.
6. **PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS** - Emphasize the importance of recognizing etiology, aggressive airway maintenance, glucose monitoring and naloxone administration.
7. **PEDIATRIC BRADYCARDIA** - Treatment in accordance with the current American Heart Association recommendations.
8. **PEDIATRIC BURNS** - Special emphasis on the pediatric "rule of nines" for burn size estimation, aggressive airway management and triage to the appropriate facility. Differentiation should be made between thermal, chemical and electrical injuries.
9. **PEDIATRIC ENVIRONMENTAL HYPERTHERMIA** – Emphasize appropriate assessment, cooling techniques and fluid replacement considerations of children presenting with environmental hyperthermia.

10. **PEDIATRIC HYPOTHERMIA** - Emphasize the pediatric population at high risk for hypothermia: neonates and infants. Address aggressive airway management, warming techniques and recognition of frostbite injury. Interventions for arrhythmias in accordance with the American Heart Association recommendations.
11. **PEDIATRIC NEAR DROWNING** - Emphasize aggressive airway management and the potential for associated cervical spine injury and hypothermia.
12. **PEDIATRIC NERVE AGENT ANTIDOTE GUIDELINE** – Define specific antidote dosing based on mild, moderate or severe exposure and patient age/weight.
13. **PEDIATRIC PULSELESS ARREST** – Treatment modalities/algorithms should be consistent with the current guidelines set forth by the current American Heart Association “Pediatric Advanced Life Support” algorithms. The use of intraosseous access should be taught to all ALS providers.
14. **PEDIATRIC RESPIRATORY ARREST** - Treatment must be in accordance with the current American Heart Association "Pediatric Advanced Life Support" guidelines.
15. **PEDIATRIC RESPIRATORY DISTRESS** - Differentiation should be made between "upper airway obstruction" (i.e., croup, epiglottitis and foreign body) and lower airway disease (i.e., asthma, bronchiolitis, pneumonia). The potential for invasive airway interventions must also be identified.
16. **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE** – Differentiate between an obstructed and patent tracheostomy tube. Identify appropriate assessment and management of the child presenting with respiratory distress with a tracheostomy tube.
17. **PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR** – Address steps in managing a pediatric patient that requires ventilator support. Emphasize to utilize the parents, caregivers and home health nurses as medical resources, and arrange to bring the ventilator to the hospital.
18. **PEDIATRIC SEIZURES** - Must include the identification of rapid blood glucose monitoring in the field, considerations for febrile seizures and administration of rectal benzodiazepines.
19. **PEDIATRIC SHOCK** - Differentiation should be made between "hypovolemic" (dehydration, hemorrhagic), cardiogenic and "distributive" (sepsis).
20. **PEDIATRIC TACHYCARDIA** - Interventions for both wide and narrow complex tachycardias must be in accordance with the American Heart Association recommendations.
21. **PEDIATRIC TOXIC EXPOSURES/INGESTIONS** - Incorporate accidental /environmental toxic exposure or ingestion events commonly encountered in the pediatric population.
22. **PEDIATRIC TRAUMA** - Emphasis should be made on mechanism of injury, limited on-scene time, aggressive airway maintenance, field triage to the appropriate facility and addressing the unique needs of the head-injured child. Additional information or an addendum specific to initial assessment and management of head trauma should also be included.
23. **SUSPECTED CHILD ABUSE AND NEGLECT** - Special emphasis should be made on careful documentation of physical findings, discrepancy between history of injury and physical findings, interaction between child and parent/caregiver, and characteristics of the environment. Discuss the prehospital provider's responsibility as a mandated reporter, and to report suspicions to the emergency room staff. Include directions for responding to parent/caregiver refusal to allow transport.

**ILLINOIS EMERGENCY MEDICAL SERVICES FOR CHILDREN  
PEDIATRIC INITIAL ASSESSMENT  
ALS/ILS/BLS/EMR GUIDELINE**

**I. Scene size up**

- Identify possible hazards.
- Assure safety for patient and responder.
- Observe for mechanism of injury/nature of illness.
- Note anything suspicious at the scene, i.e., medications, household chemicals, other ill family members.
- Assess any discrepancies between the history and the patient presentation, i.e., infant fell on hardwood floor; however floor is carpeted.
- Initiate appropriate body substance isolation (BSI) precautions.
- Determine the number of patients.

**II. General Approach to the Stable/Conscious Pediatric Patient**

- A. Assessments and interventions must be tailored to each child in terms of age, size and development.
- Smile if appropriate to the situation.
  - Keep voice at even quiet tone, don't yell.
  - Speak slowly; use simple, age appropriate terms.
  - Use toys or penlight as distractors; make a game of assessment.
  - Keep small children with their caregiver(s); encourage assessment while caregiver is holding child.
  - Kneel down to the level of the child if possible.
  - Be cautious in use of touch. In the stable child, make as many observations as possible before touching (and potentially upsetting) the child.
  - Adolescents may need to be interviewed without their caregivers present if accurate information is to be obtained regarding drug use, alcohol use, LMP, sexual activity, child abuse.
- B. While walking up to the patient, observe/inspect the following:
- General appearance, age appropriate behavior. Does child have a malnourished appearance? Is child looking around, responding with curiosity or fear, playing, sucking on a pacifier or bottle, quiet, eyes open but not moving much or uninterested in environment?
  - Obvious respiratory distress/increased work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.
  - Color: pink, pale, flushed, cyanotic, mottled.
  - Position of the child. Are the head, neck or arms being held in a position suggestive of spinal injury? Is the patient sitting up or tripodding?
  - Level of consciousness, i.e., awake vs asleep or unresponsive.
  - Muscle tone: good vs limp.
  - Movement: spontaneous, purposeful, symmetrical.
  - Obvious injuries, bleeding, bruising, impaled objects or gross deformities.
  - Assess for pain.
  - Determine weight - ask child or caretakers or use length/weight tape.

**III. Initial Assessment**

- A. Airway Access/Maintenance with Cervical Spine Control
- Maintainable with assistance: positioning.
  - Maintainable with adjuncts: oral airway, nasal airway.
  - Maintainable with endotracheal tube.
  - Listen for any audible airway noises, i.e., stridor, snoring, gurgling, wheezing.
  - Patency: suction secretions as necessary.
- B. Breathing
- Rate and rhythm of respirations. Compare to normal rate for age and situation.
  - Chest expansion: symmetrical.



- Breath sounds: compare both sides and listen for sounds (present, absent, normal, abnormal).
  - Positioning: sniffing position, tripod position.
  - Work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.
- C. Circulation
- Heart rate: compare to normal rate for age and situation.
  - Central/truncal pulses (brachial, femoral, carotid): strong, weak or absent.
  - Distal/peripheral pulses: present/absent, thready, weak, strong.
  - Color: pink, pale, flushed, cyanotic, mottled.
  - Skin temperature: hot, warm, cool.
  - Blood pressure: compare to normal for age of child. Must use appropriately sized cuff.
  - Hydration status: anterior fontanel in infants, mucous membranes, skin turgor, crying tears, urine output history.
- D. Disability - Brief Neuro Examination
- Assess Responsiveness
    - A** Alert
    - V** Responds to verbal stimuli
    - P** Responds to painful stimuli
    - U** Unresponsive
  - Assess pupils.
  - Assess for transient numbness/tingling.
- E. Expose and Examine
- Expose the patient as appropriate based on age and severity of illness.
  - Initiate measures to prevent heat loss and keep the child from becoming hypothermic.

#### IV. Focused History/Physical Assessment

Tailor assessment to the needs of the patient. Rapidly examine areas specific to the chief complaint.

- A. Patient History - Acquire during/incorporate into physical exam.
- S Signs & Symptoms** as they relate to the chief complaint.
  - A Allergies** to medications, foods, environment
  - M Medications:** prescribed, over-the-counter, compliance with prescribed dosing regimen, time, date and amount of last dose
  - P Past Pertinent Medical History**
    - Pertinent medical or surgical problems
    - Preexisting diseases/chronic illness
    - Previous hospitalizations
    - Currently under medical care
    - For infants, obtain a neonatal history (gestation, prematurity, congenital anomalies, was infant discharged home at the same time as the mother)
  - L Last oral intake** of liquid/food ingested.
  - E Events surrounding current problem**
    - Onset, duration and precipitating factors
    - Associated factors such as toxic inhalants, drugs, alcohol
    - Injury scenario and mechanism of injury
    - Treatment given by caregiver
- B. Responsive Medical Patients
- Perform rapid assessment based on chief complaint. A full review of systems may not be necessary. If chief complaint is vague, examine all systems.
- C. Unresponsive Medical Patients
- Perform rapid assessment: ABC's, quick head-to-toe exam.
  - Emergency care is based on signs and symptoms, initial impressions and standard operating procedures.

- D. Trauma patient with **NO** significant mechanism of injury.
  - Focused assessment is based on specific injury site.
- E. Trauma patient **WITH** significant mechanism of injury
  - Perform rapid assessment of all body systems.

## V. Detailed Assessment

- A. Performed to detect non-life threatening conditions and to provide care for those conditions/injuries. Usually performed enroute. May be performed on scene if transport is delayed.
  - Inspect and palpate each of the major body systems for the following:
    - Deformities
    - Contusions
    - Abrasions
    - Penetrations/punctures
    - Burns
    - Lacerations
    - Swelling/edema
    - Tenderness
    - Instability
    - Crepitus
  - Auscultation of breath and heart sounds as well as blood pressure readings may be required in the field.

## VI. Ongoing Assessment

To effectively maintain awareness of changes in the patient's condition, repeated assessments are essential and should be performed **at least every 5 minutes on the unstable patient**, and **at least every 15 minutes on the stable patient**.

## VII. Considerations for Children with Special HealthCare Needs (CSHCN)

- Track CSHCN in your service community and become familiar with both the child as well as their anticipated emergency care needs.
- Refer to child's emergency care plan formulated by their medical providers, if available. Understanding the child's baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional level/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
- Regardless of underlying condition, assess in a systematic and thorough manner.
- Use parents/caregivers/home health nurses as medical resources at home and enroute.
- Be prepared for differences in airway anatomy, physical development, cognitive development and possibly existing surgical alterations or mechanical adjuncts. Common home therapies include: respiratory support (oxygen, apnea monitors, pulse oximeters, tracheostomies, mechanical ventilators), nutrition therapy (nasogastric or gastrostomy feeding tubes), intravenous therapy (central venous catheters), urinary catheterization or dialysis (continuous ambulatory peritoneal dialysis), ostomy care, orthotic devices, communication or mobility devices, or hospice care.
- Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the child.
- The most common emergency encountered with these patients is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

ILLINOIS EMSC  
INITIAL MEDICAL CARE/ASSESSMENT  
ALS/ILS CARE GUIDELINE

- Assess scene safety
- Ensure Body Substance Isolation (BSI)
- Assess Airway Breathing and Circulation (ABC's)
- Assess level of consciousness
- Administer O<sub>2</sub> per appropriate method
- Support with bag mask ventilation as indicated
- Test blood glucose
- Apply Cardiac monitor
- Apply Pulse oximetry

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC  
INITIAL MEDICAL CARE/ASSESSMENT  
BLS/EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

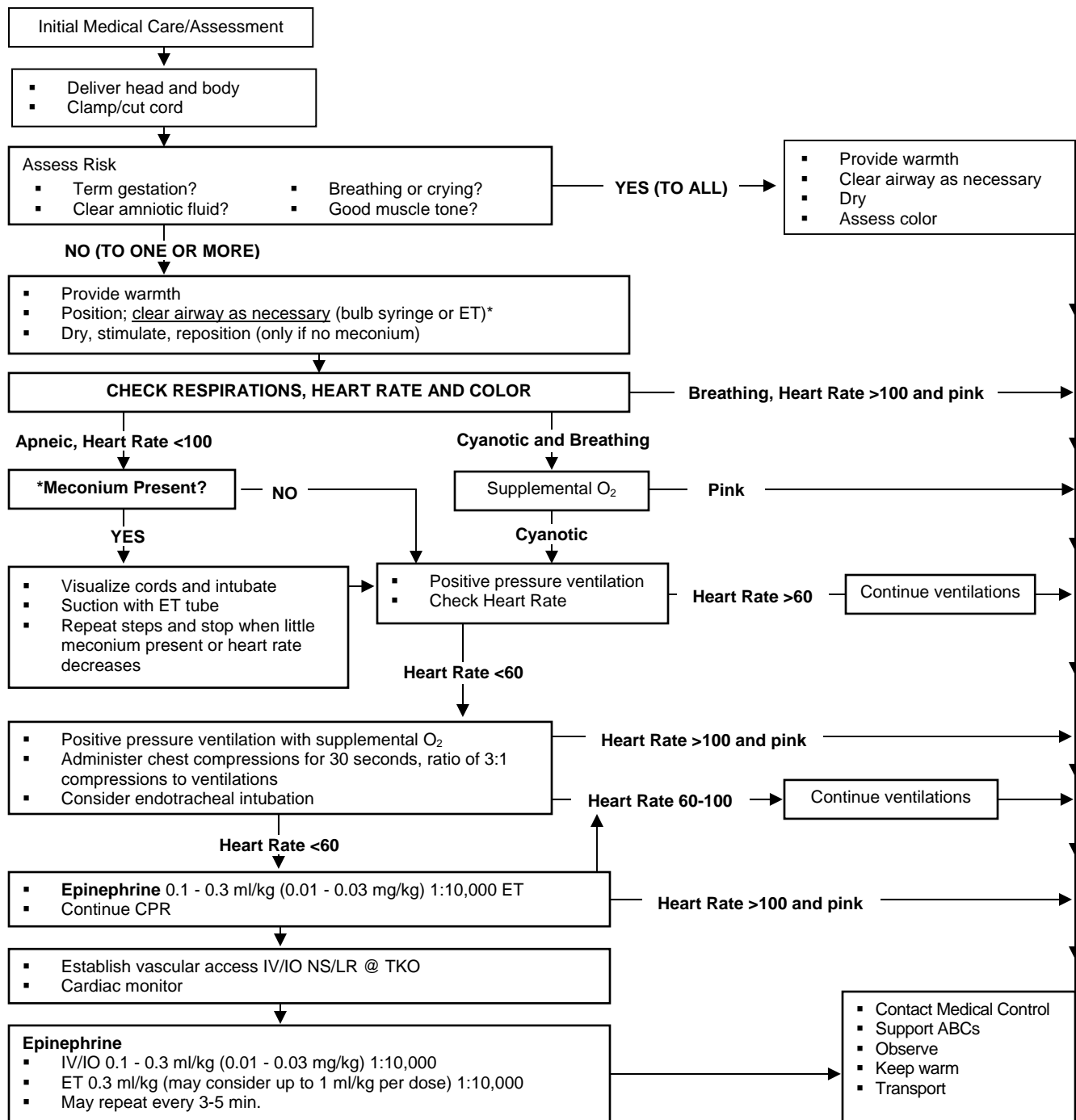
- Assess scene safety
- Ensure Body Substance Isolation (BSI)
- Assess and support Airway, Breathing, Circulation (ABC's)
- Assess level of consciousness
- Administer O<sub>2</sub> per appropriate method
- Support with bag mask ventilation as indicated
- Test blood glucose **if available**
- Apply Pulse oximetry **if available**

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# ILLINOIS EMSC

## NEONATAL RESUSCITATION

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

- Focus should be on neonate appearance, not the presence of meconium.
- Consider APGAR at 1 min, repeat every 5 mins. Do not interrupt resuscitation efforts to obtain APGAR.

#### Per Medical Control consider:

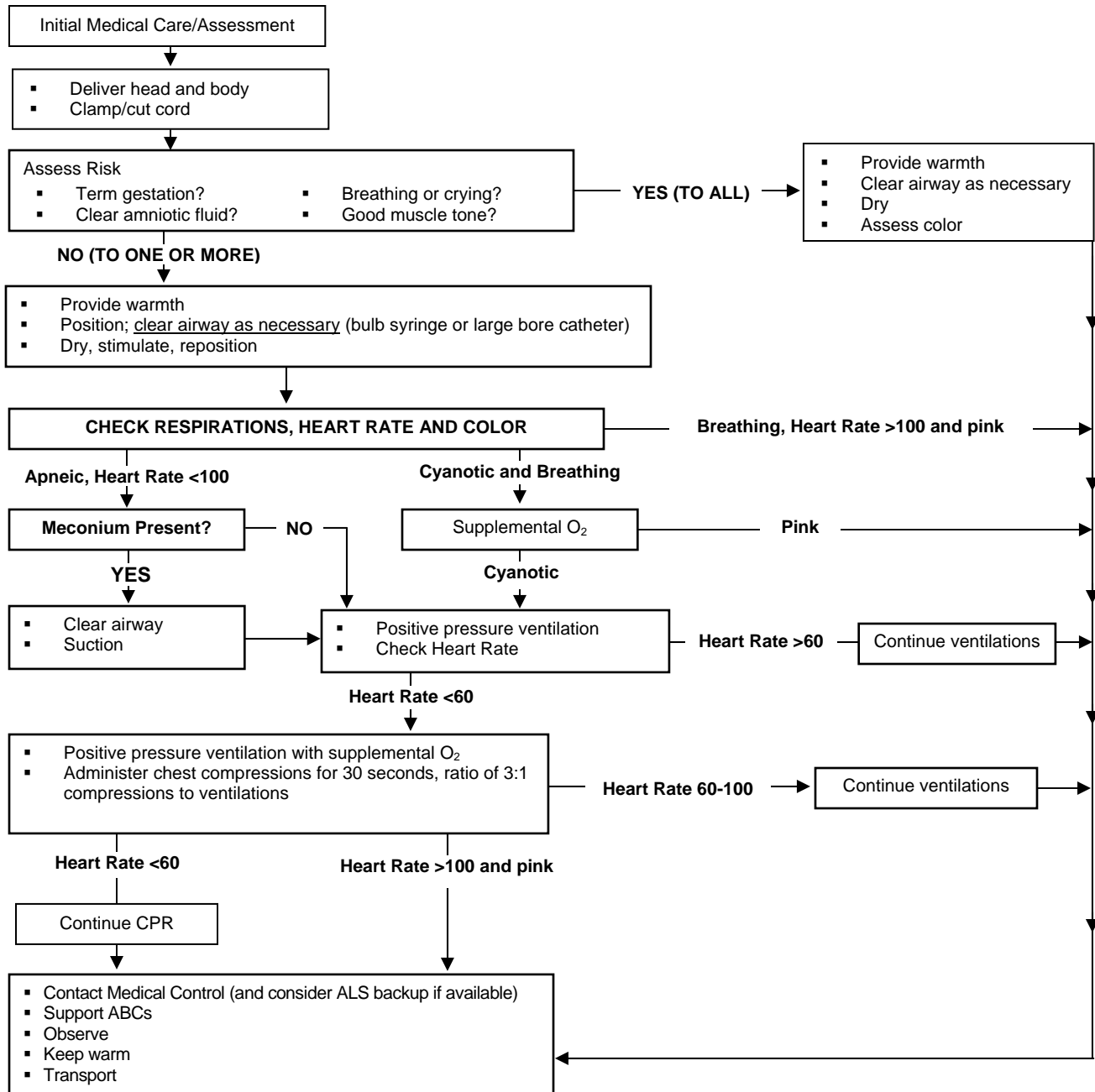
- D12.5% 1-2 ml/kg IV/IO (Dilute D25% 1:1 with sterile water)
- Fluid Bolus 10 ml/kg NS/LR
- Naloxone 0.1 mg/kg IV/IO/ET

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# ILLINOIS EMSC

## NEONATAL RESUSCITATION

### BLS CARE GUIDELINE



#### Special Considerations:

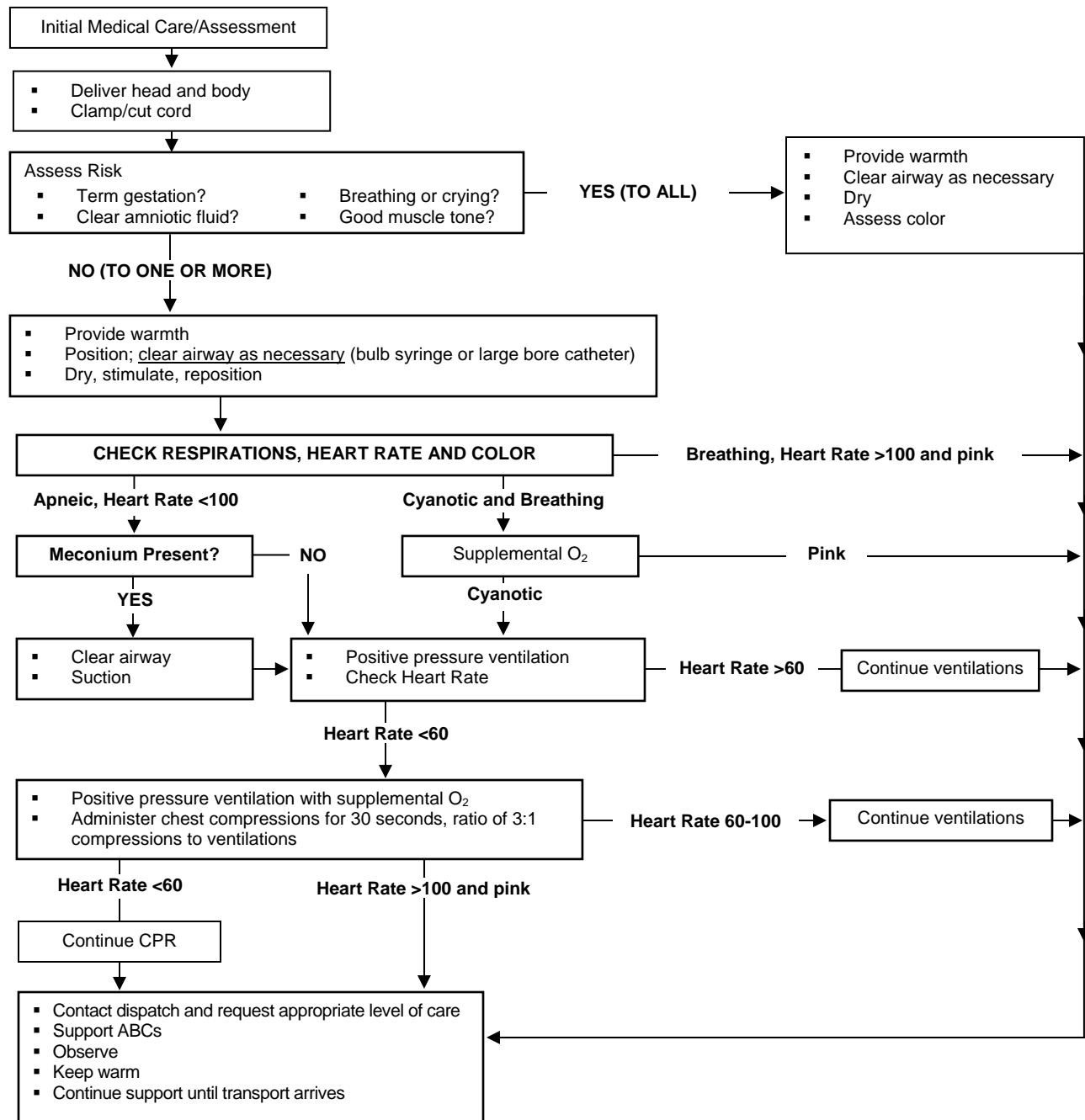
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# ILLINOIS EMSC

## NEONATAL RESUSCITATION

### EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



#### Special Consideration:

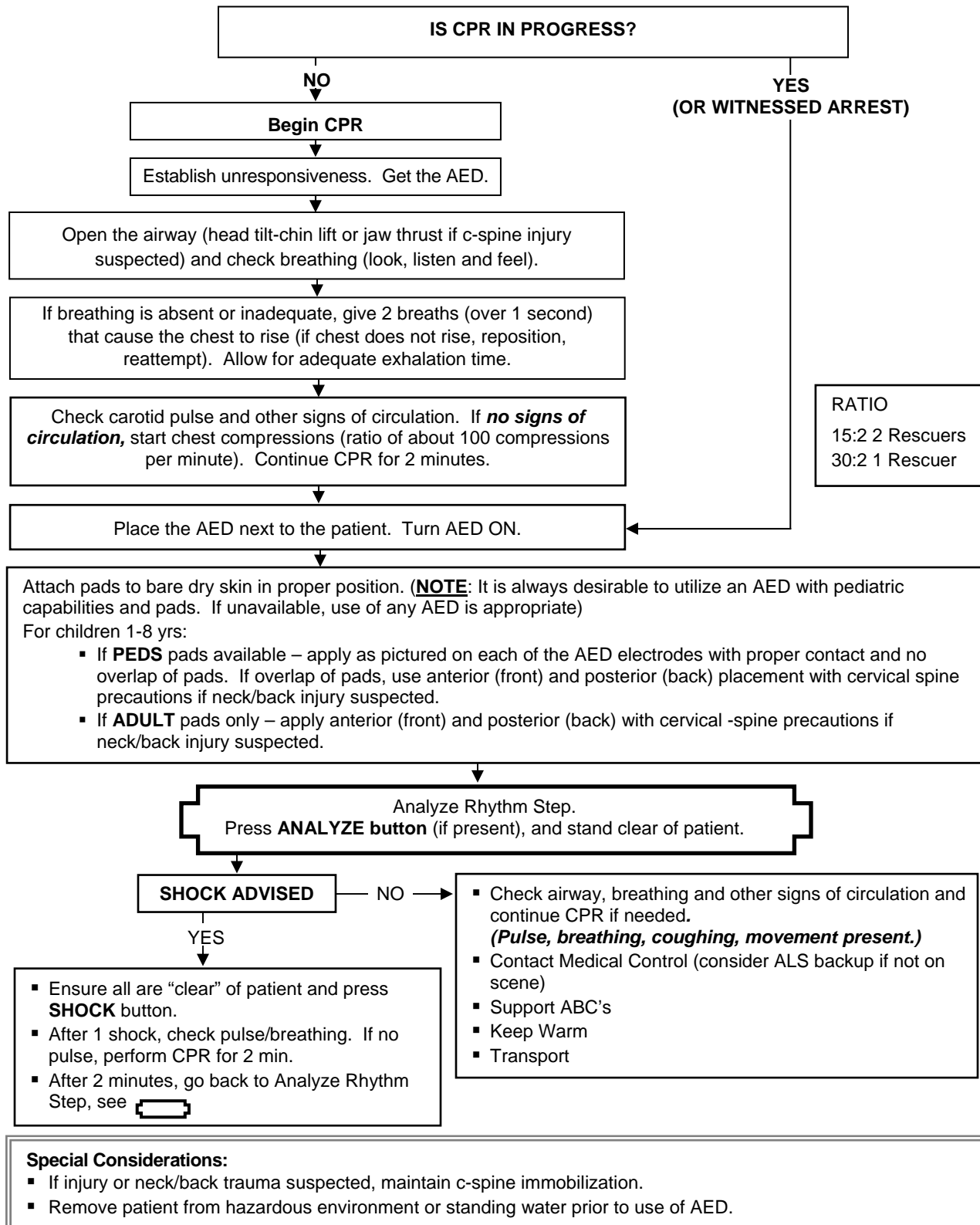
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# ILLINOIS EMSC

## PEDIATRIC AED PROTOCOL

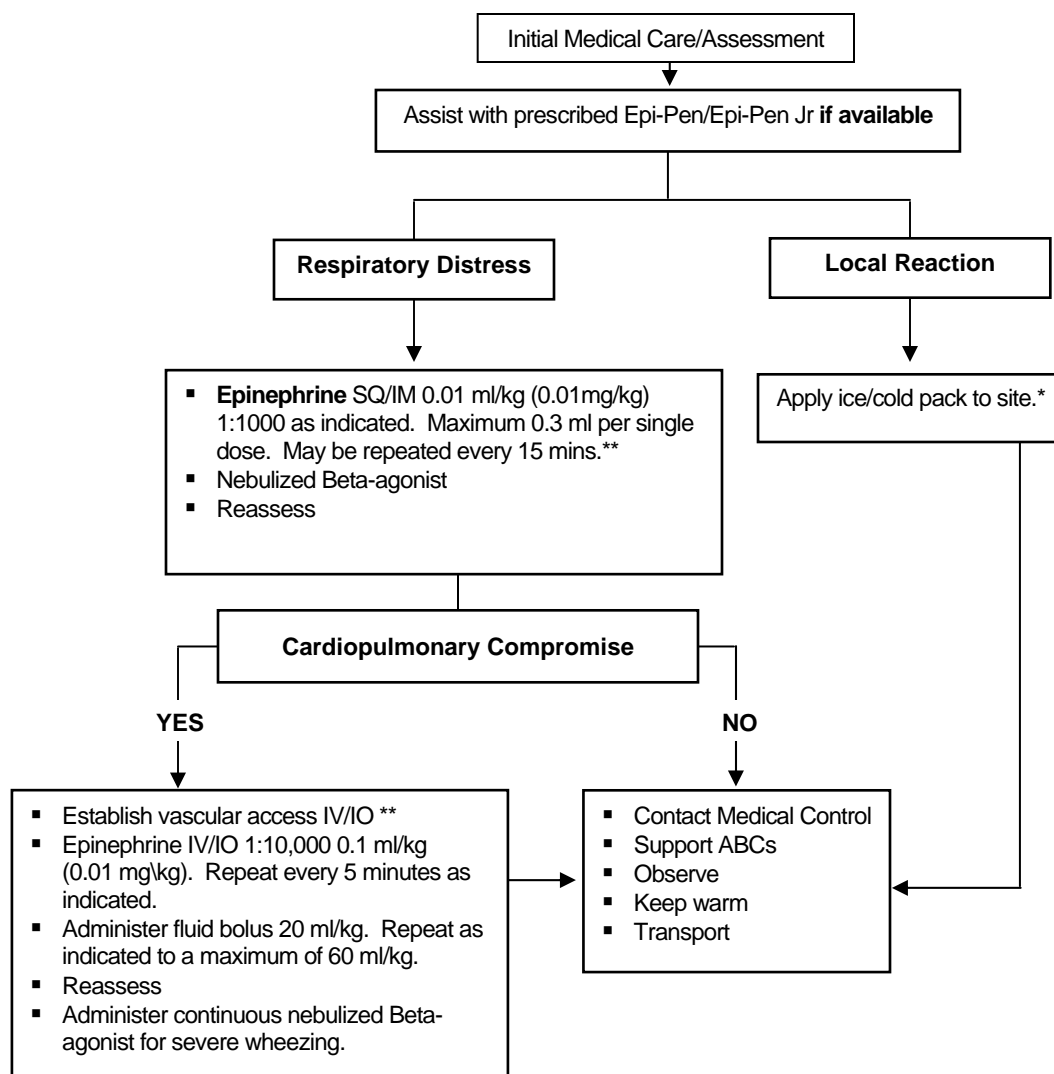
### ALS, ILS, BLS, EMR GUIDELINE



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ILLINOIS EMSC  
PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS  
ALS CARE GUIDELINE



**Special Considerations:**

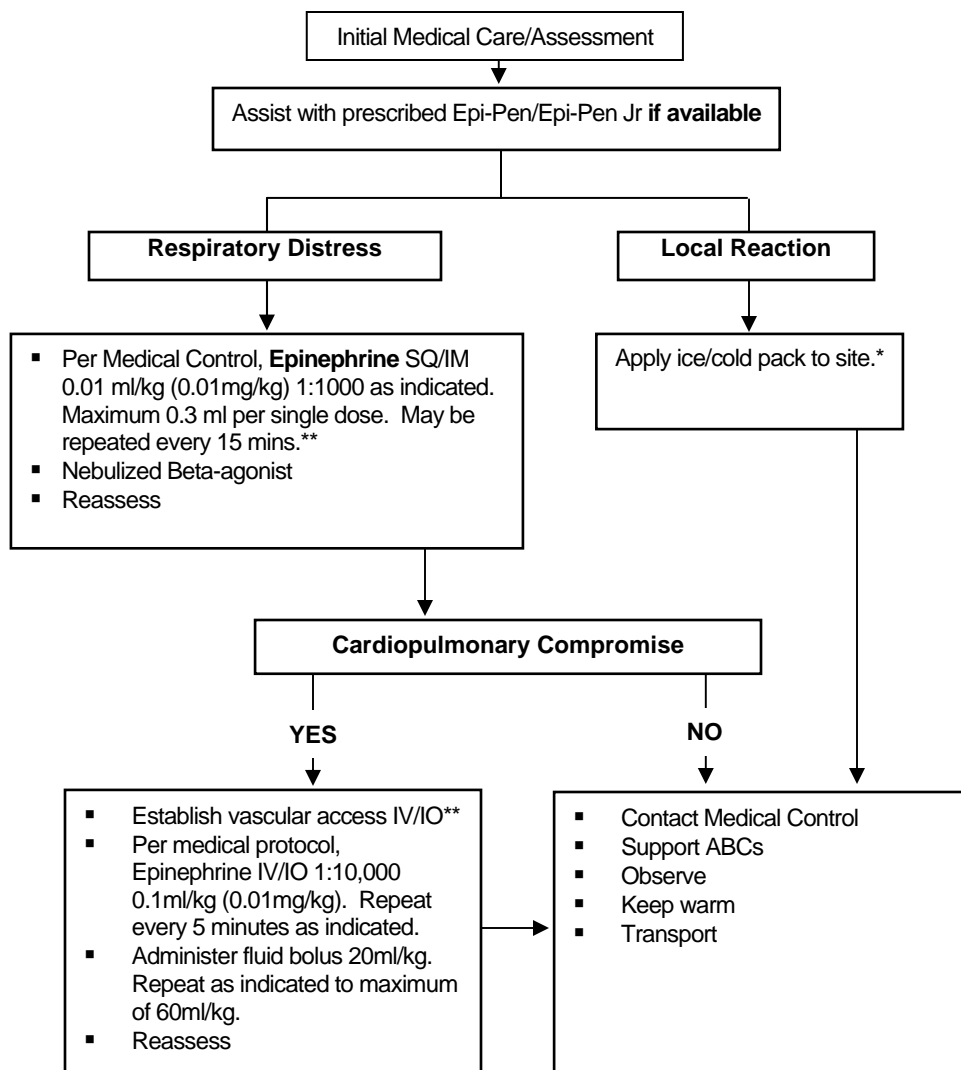
- **Epi-Pen** – use a 0.3mg auto-injector for children over 30kg and Epi-Pen Jr 0.15mg auto-injector for children less than 30kg.
- **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**. An inhaler should be administered through a holding chamber or spacer device **if available**.
- Combination Beta-agonist/corticosteroid inhaler can be used per medical direction.
- If prolonged transport, per Medical Control consider IV Diphenhydramine 1mg/kg slow IVP over 2-3 minutes. (Max dose 50 mg)
- Consider IV steroids via intravenous route as per Medical Control.

\*Simple hives without airway complaints may not require any additional field treatment.

\*\*Avoid IV initiation or medication administration into same extremity as bite or allergen site.

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ILLINOIS EMSC  
PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS  
ILS CARE GUIDELINE



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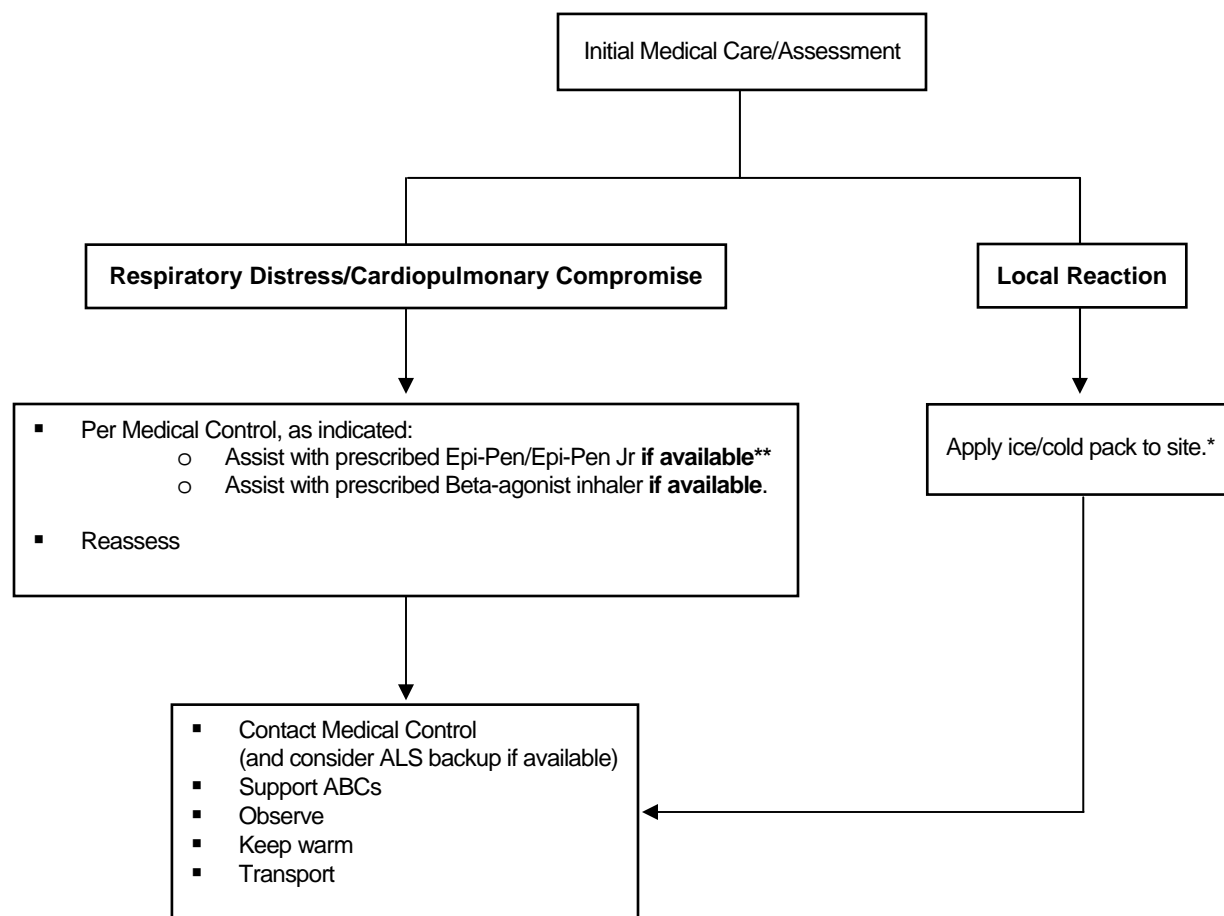
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PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS  
BLS CARE GUIDELINE



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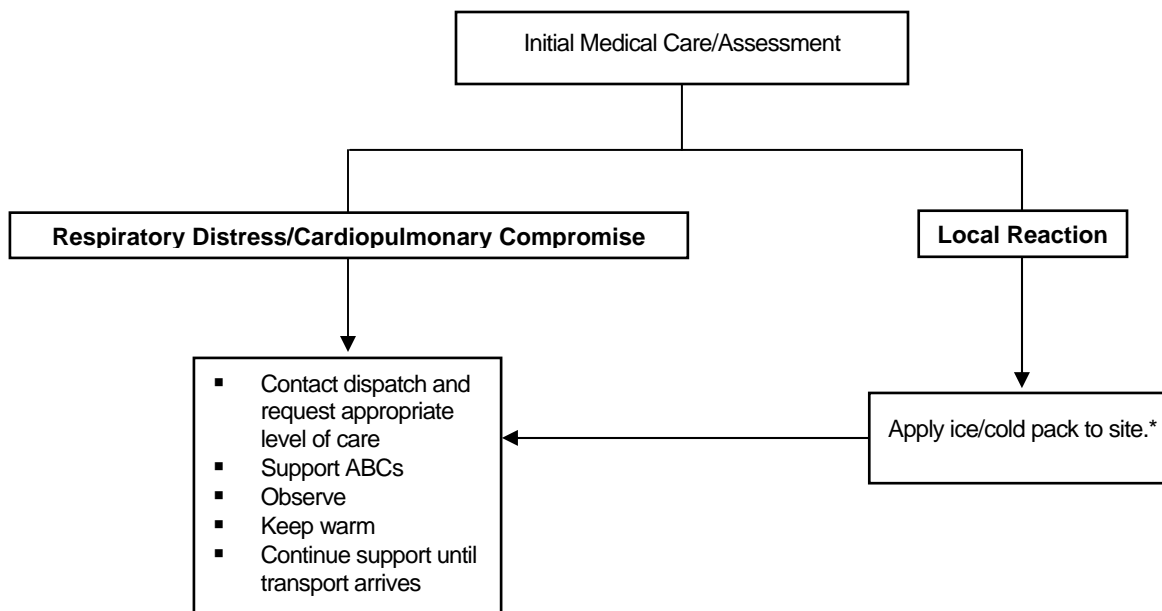
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ILLINOIS EMSC  
PEDIATRIC ALLERGIC REACTION/ANAPHYLAXIS  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



**Special Considerations:**

- Advise patient to administer Epi-Pen/Epi-Pen Jr or Beta-agonist MDI inhaler. Avoid medication administration into same extremity as bite or allergen site.
- **Epi-Pen** – use a 0.3mg auto-injector for children over 30kg and Epi-Pen Jr 0.15mg auto-injector for children less than 30kg.
- **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**. An inhaler should be administered through a holding chamber or spacer device **if available**.

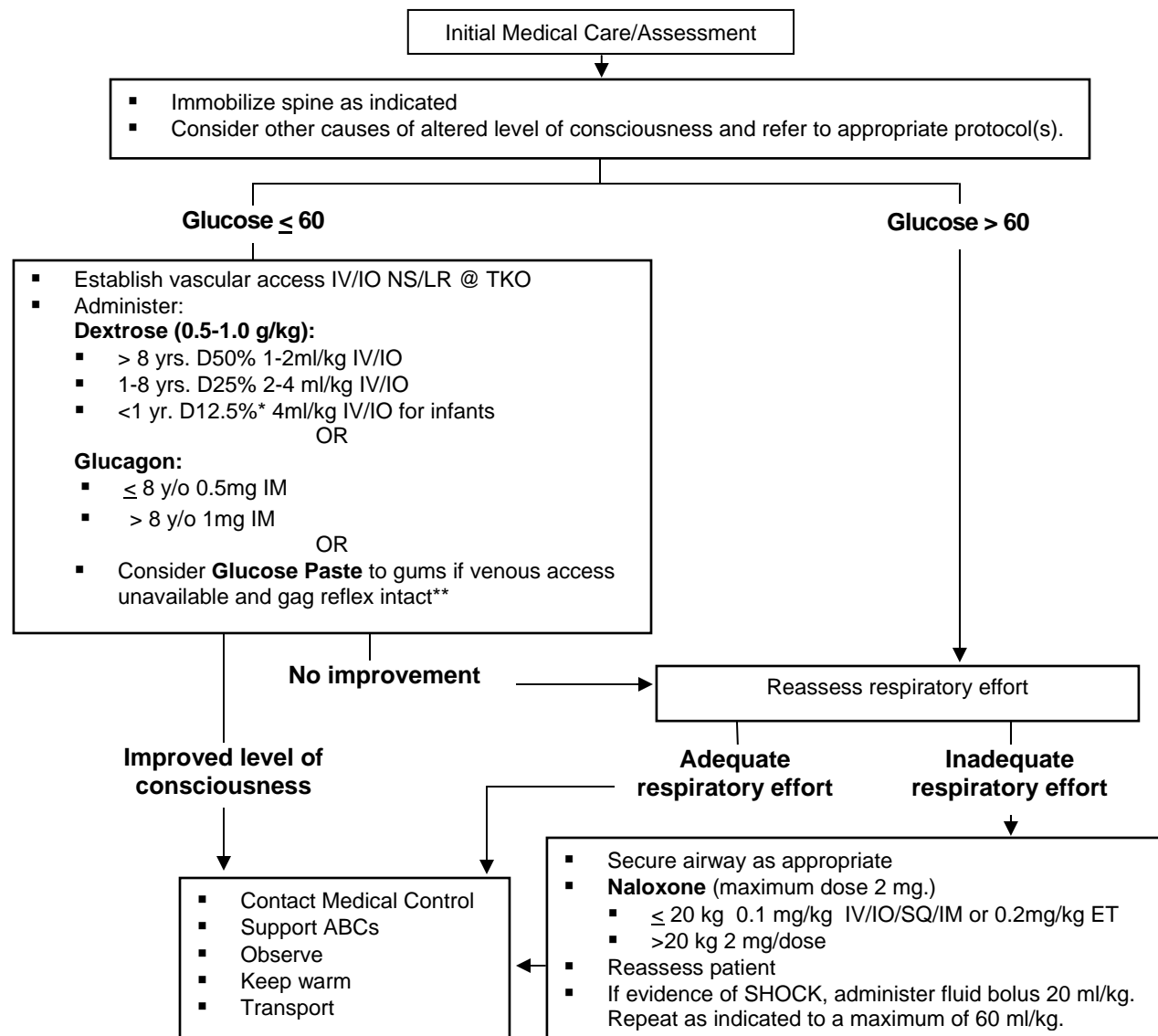
\*Simple hives without airway complaints may not require any additional field treatment.

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# ILLINOIS EMSC

## PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

Consider causes:

**A** Alcohol, abuse  
**E** Epilepsy, electrolytes, encephalopathy  
**I** Insulin  
**O** Opiates, overdose  
**U** Uremia

**T** Trauma, temperature  
**I** Infection, intussusception, inborn errors  
**P** Psychogenic  
**P** Poison  
**S** Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt

\* To make **D12.5%** dilute **D25%** 1:1 with sterile water.

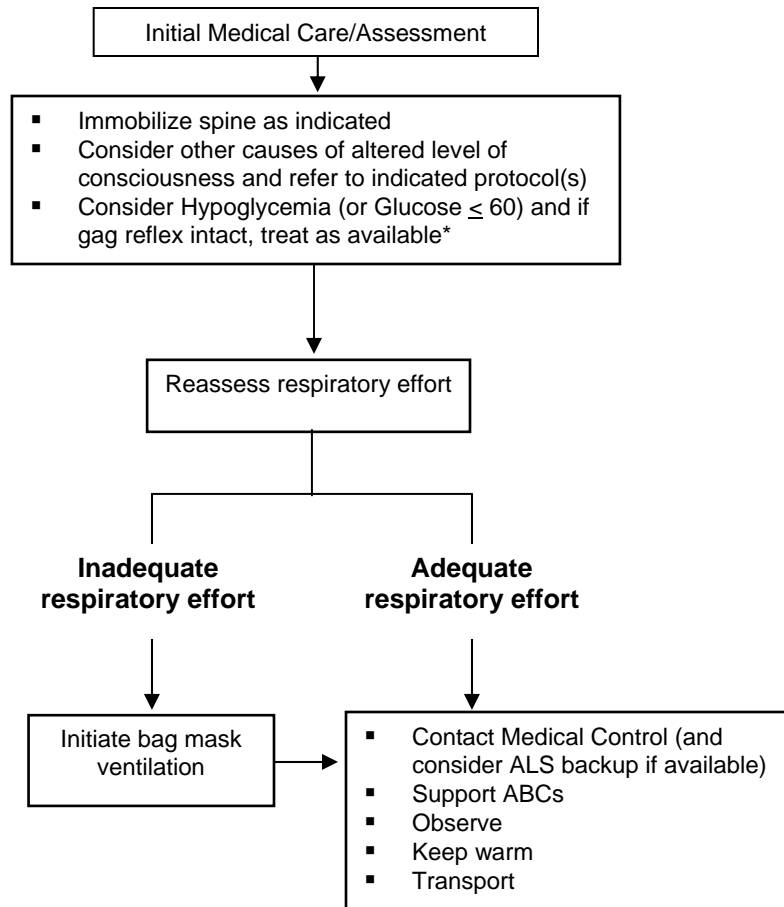
\*\*Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

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# ILLINOIS EMSC

## PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS

### BLS CARE GUIDELINE



#### Special Considerations:

Consider causes:

<b>A</b> Alcohol, abuse	<b>T</b> Trauma, temperature
<b>E</b> Epilepsy, electrolytes, encephalopathy	<b>I</b> Infection, intussusception, inborn errors
<b>I</b> Insulin	<b>P</b> Psychogenic
<b>O</b> Opiates, overdose	<b>P</b> Poison
<b>U</b> Uremia	<b>S</b> Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt

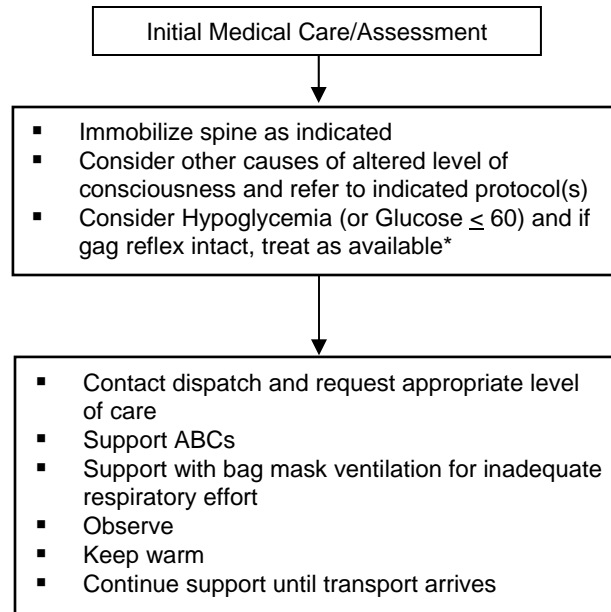
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# ILLINOIS EMSC

## PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS

### EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



#### **Special Considerations:**

Consider causes:

<b>A</b> Alcohol, abuse	<b>T</b> Trauma, temperature
<b>E</b> Epilepsy, electrolytes, encephalopathy	<b>I</b> Infection, intussusception, inborn errors
<b>I</b> Insulin	<b>P</b> Psychogenic
<b>O</b> Opiates, overdose	<b>P</b> Poison
<b>U</b> Uremia	<b>S</b> Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt

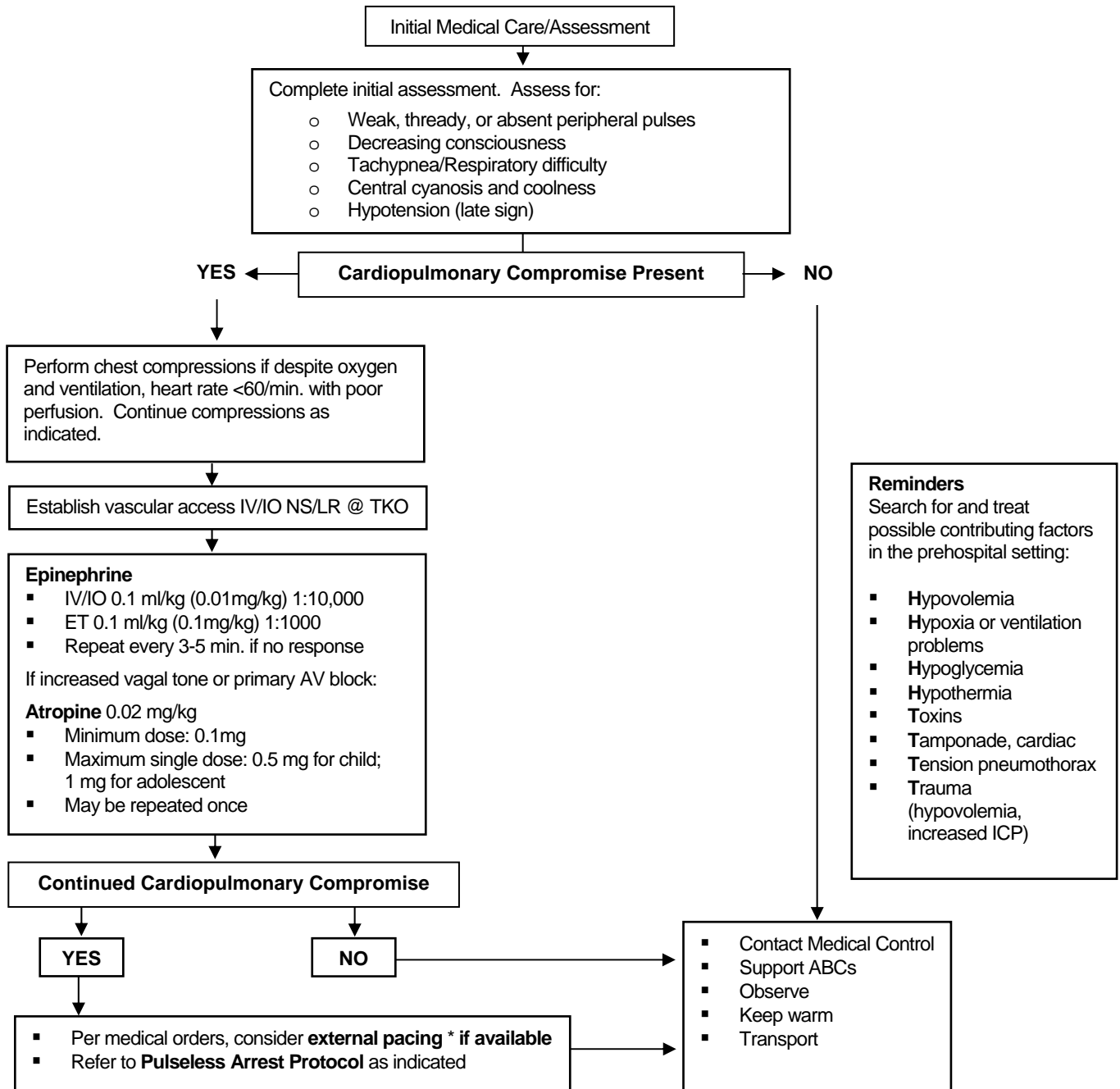
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# ILLINOIS EMSC

## BRADYCARDIA PROTOCOL

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

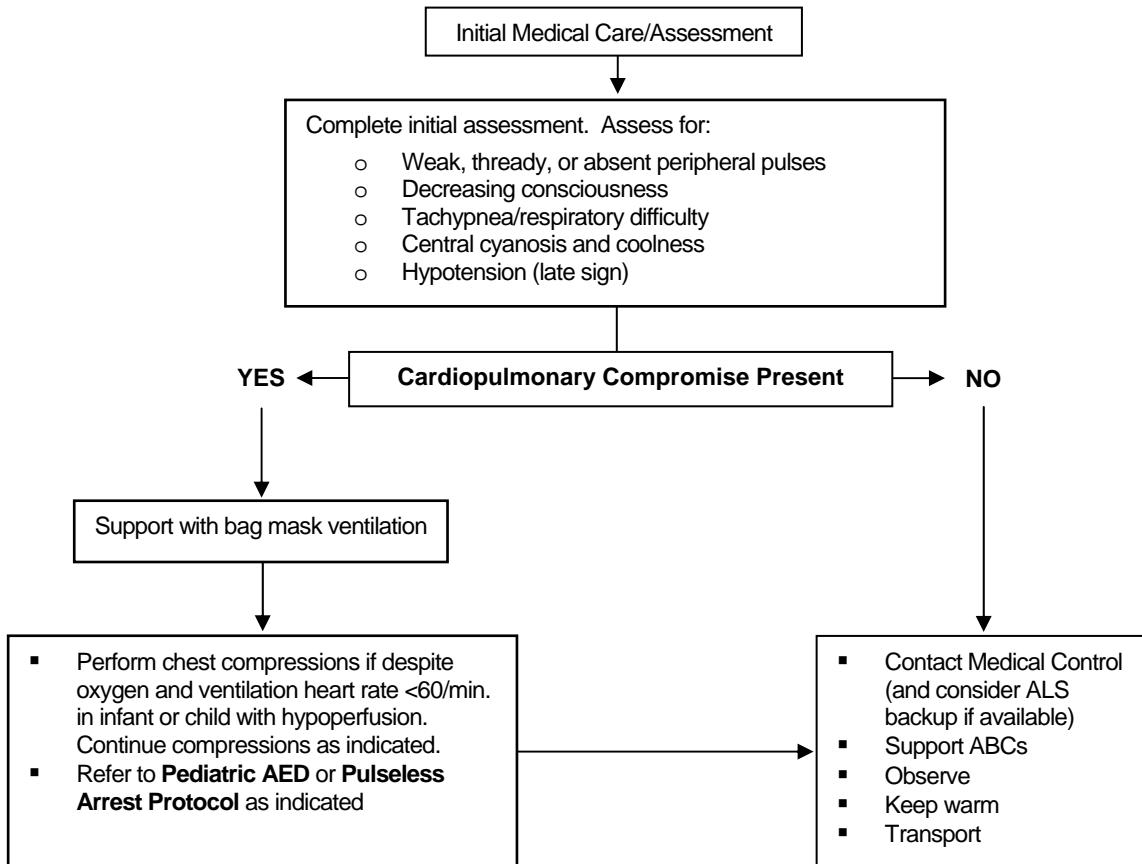
- Special conditions may apply in the presence of severe hypothermia. Refer to **Hypothermia Protocol** as indicated.

\*Limited pediatric data on efficacy of external pacing.

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ILLINOIS EMSC  
BRADYCARDIA PROTOCOL  
BLS CARE GUIDELINE

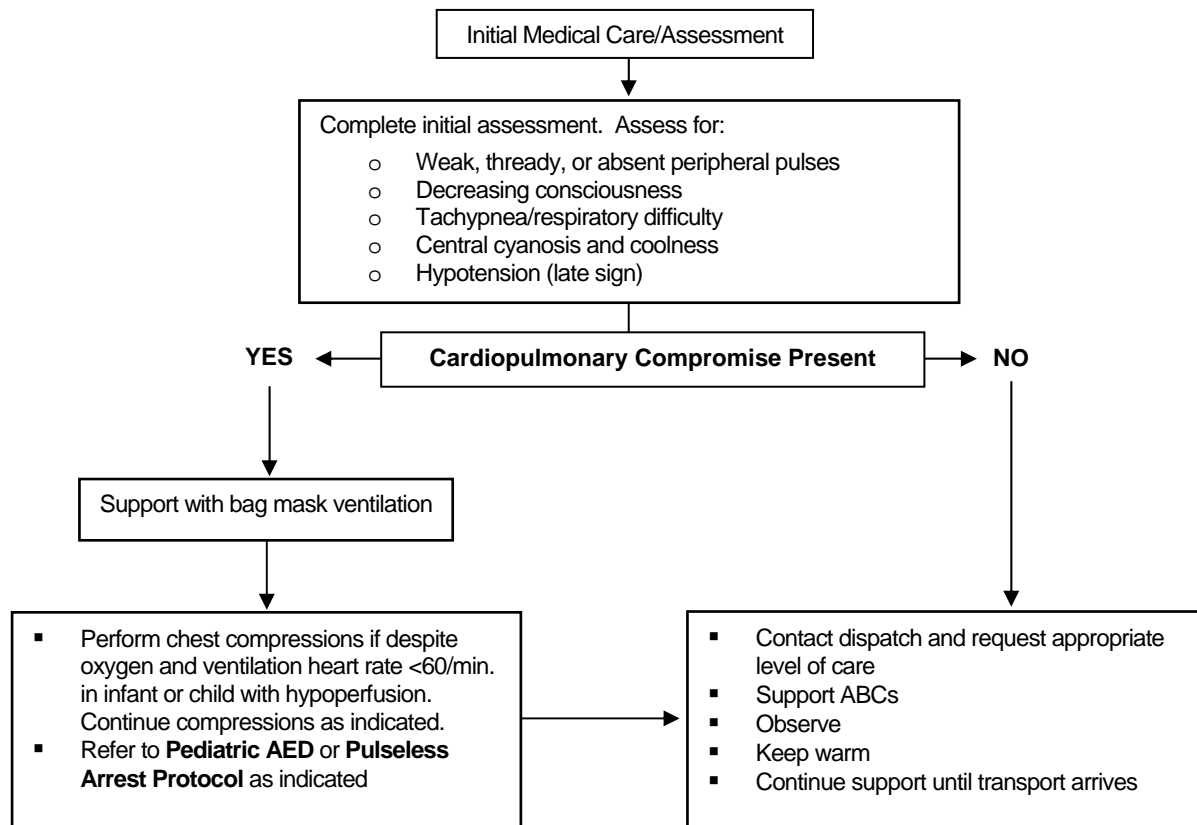


**Special Considerations:**

- Hypoglycemia has been known to cause bradycardia in infants and children.
- Special conditions may apply in the presence of severe hypothermia. Refer to **Hypothermia Protocol** as indicated.

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ILLINOIS EMSC  
BRADYCARDIA PROTOCOL  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



**Special Considerations:**

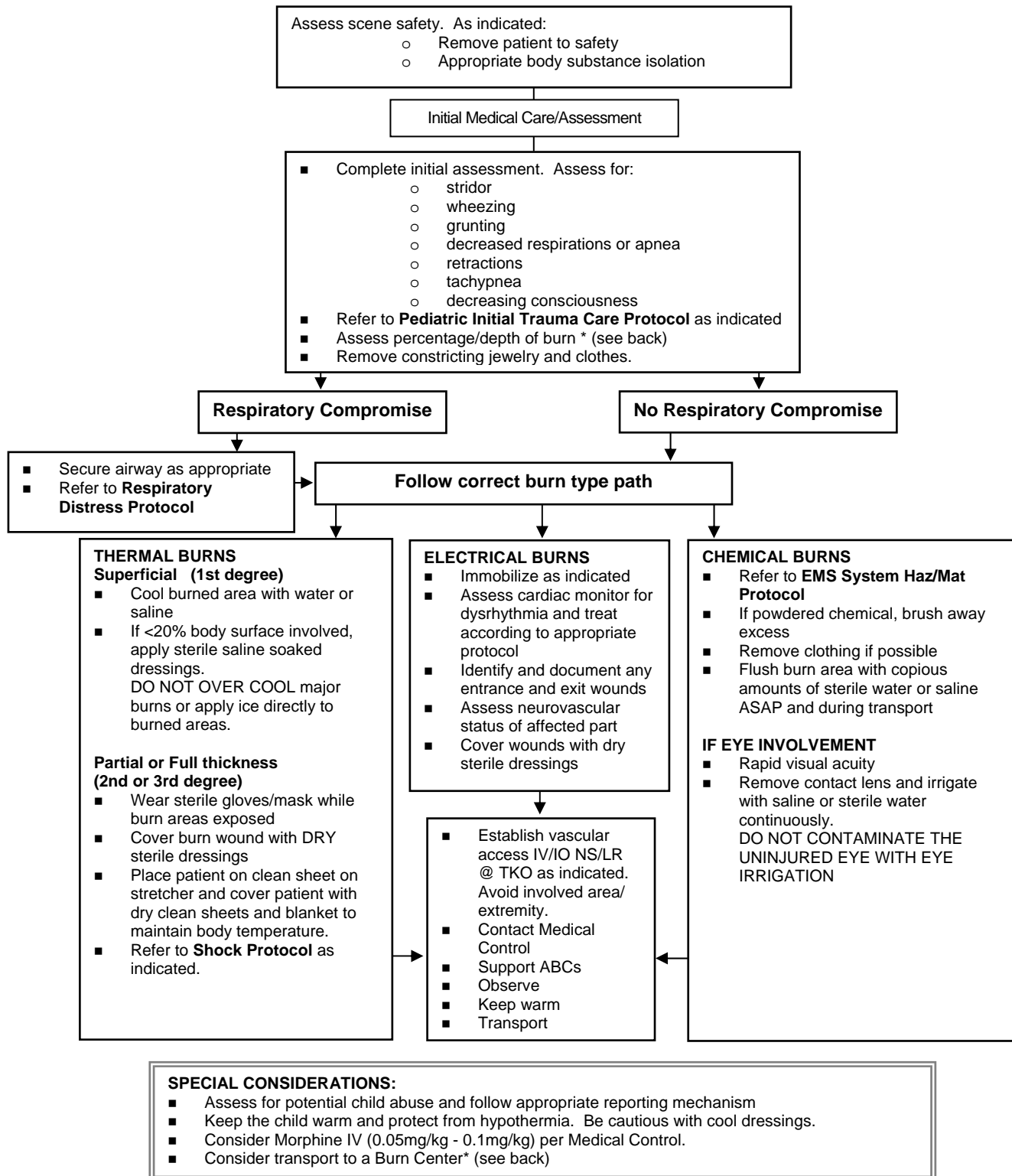
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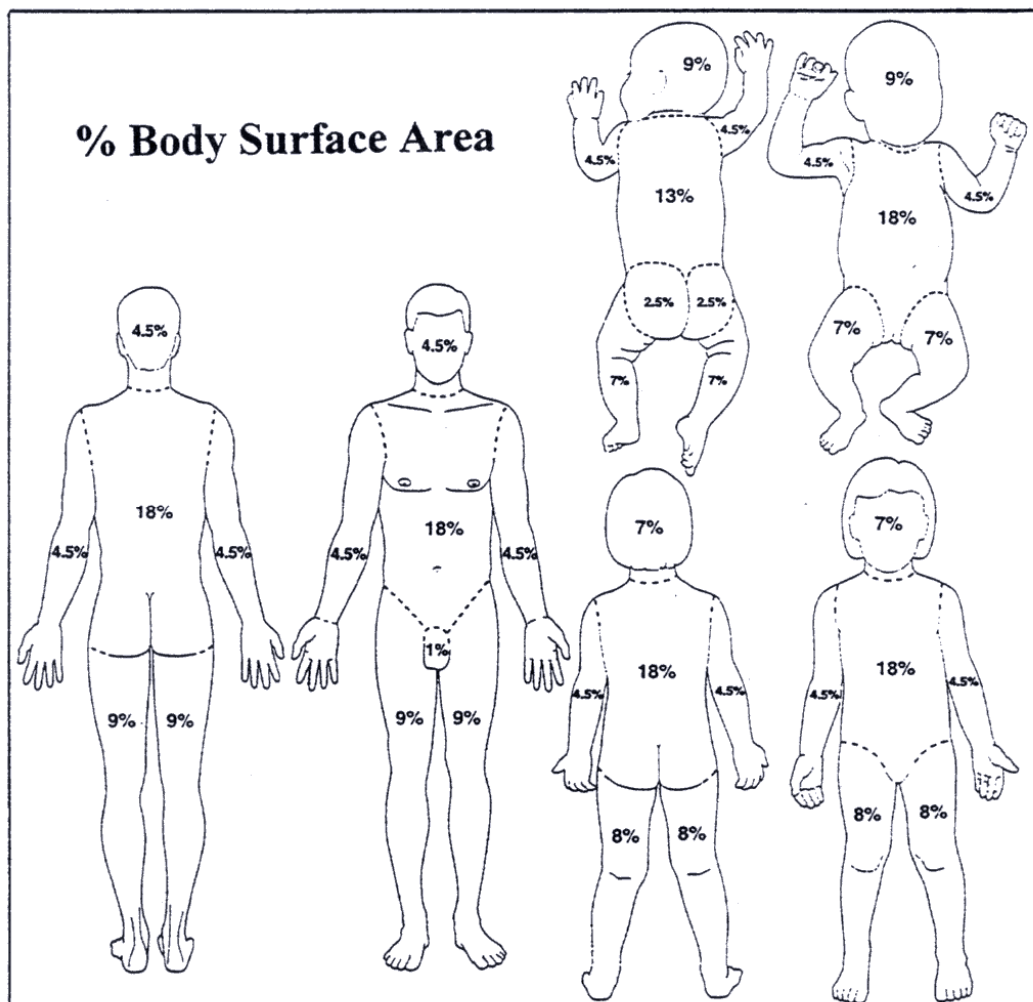
# ILLINOIS EMSC

## PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL)

### ALS/ILS CARE GUIDELINE



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Palm of hand (including fingers) of infant or child = 1% of the total body surface

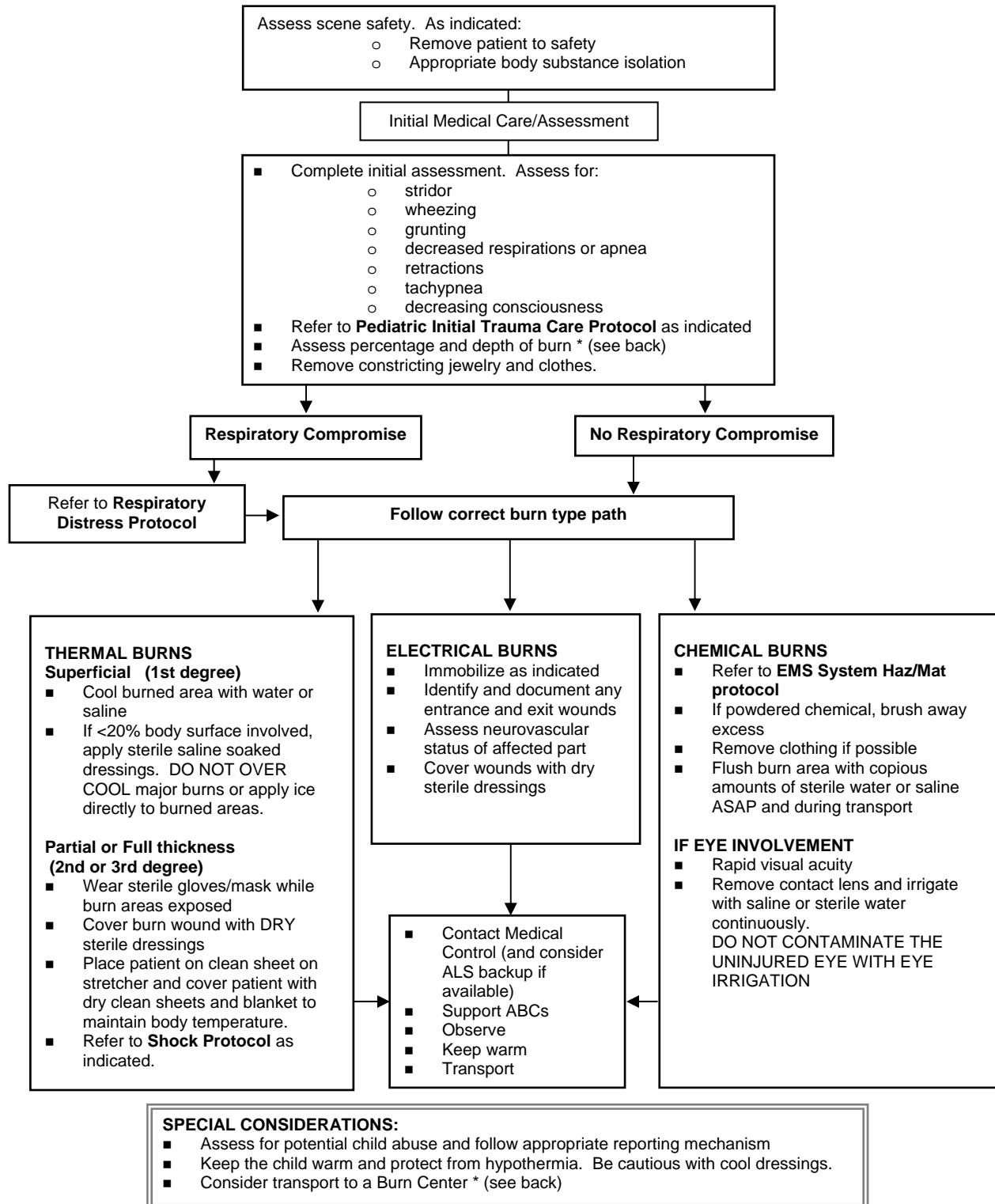
Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center. Listed below is the American Burn Association criteria for pediatric patients to be transported to a burn center.

1. Partial thickness burns of greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns (including lightning injury)
5. Chemical burns
6. Inhalation injury
7. Burn injury in patient with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention

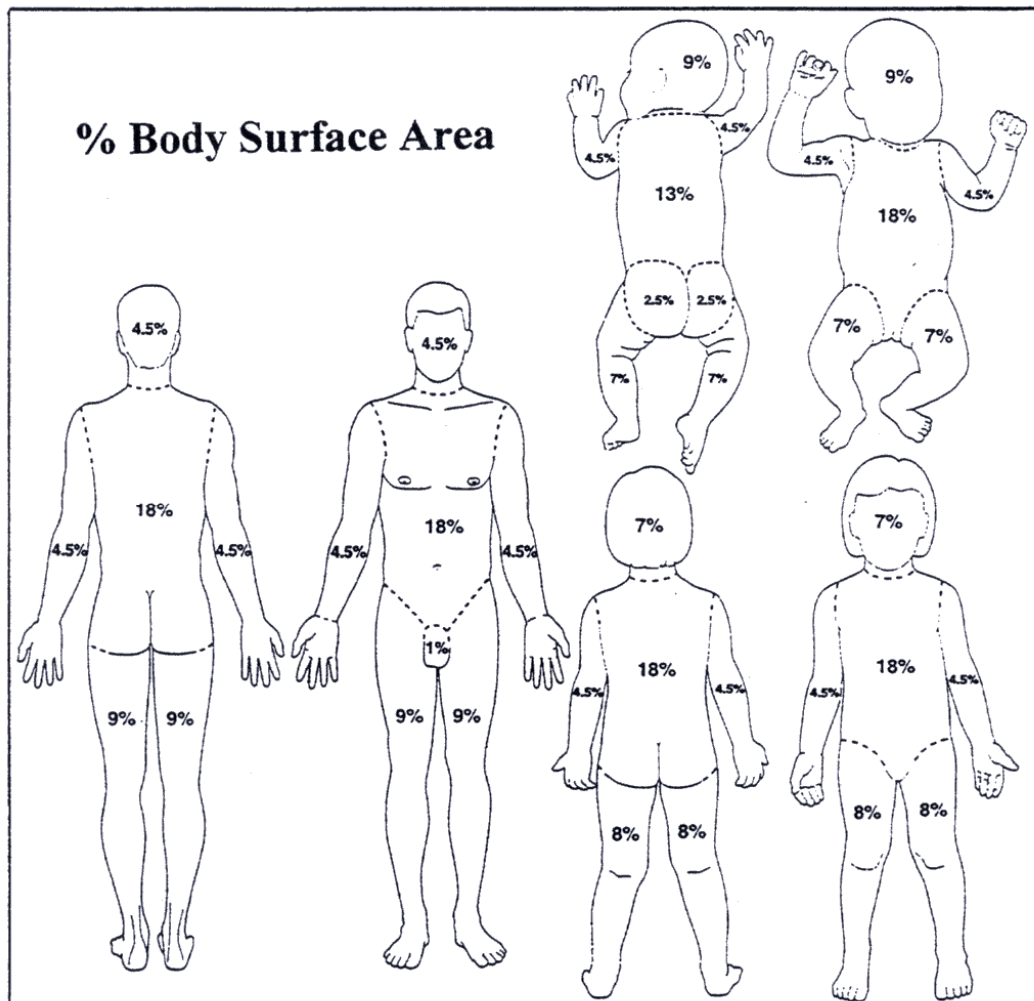
# ILLINOIS EMSC

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### BLS CARE GUIDELINE



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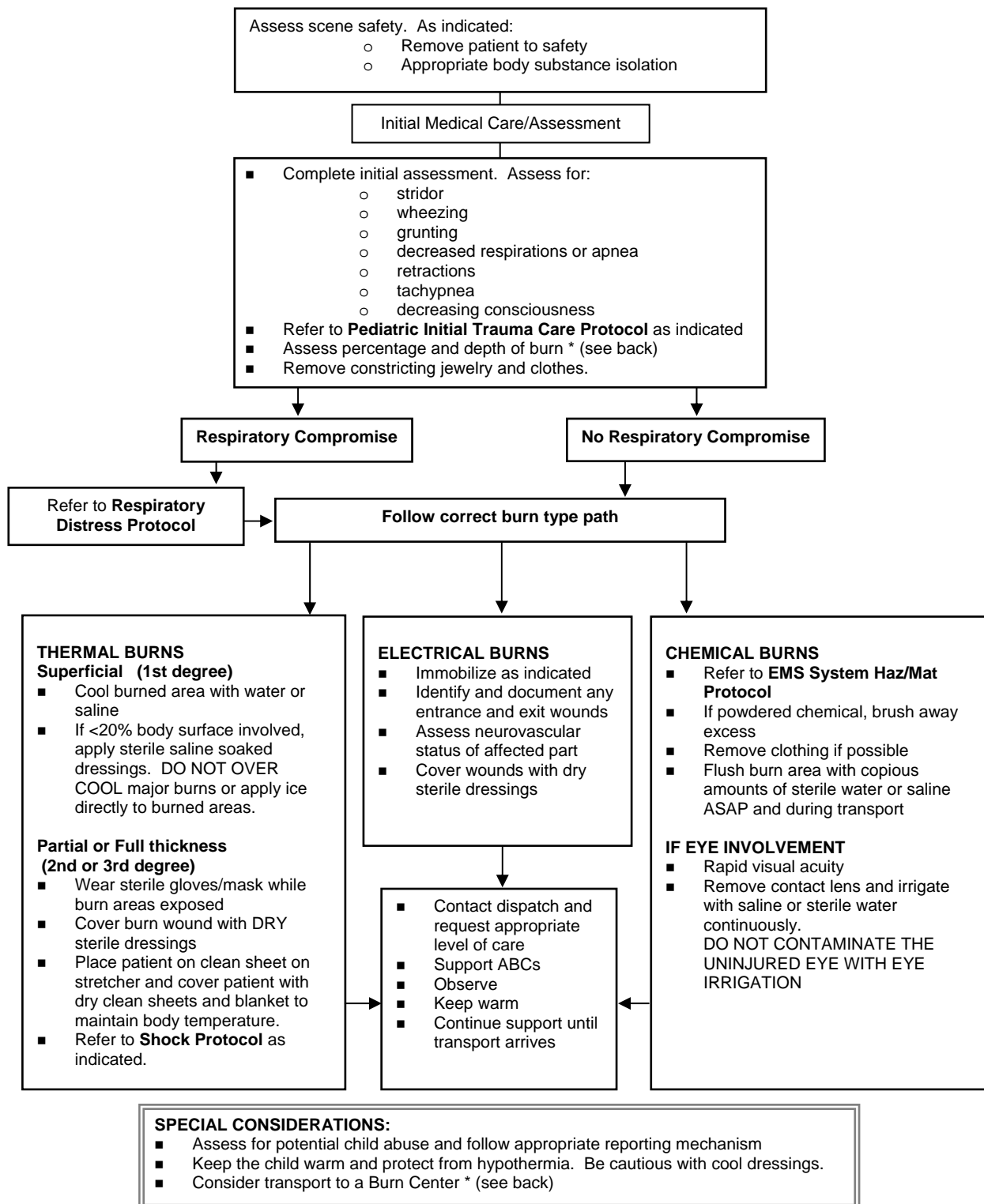
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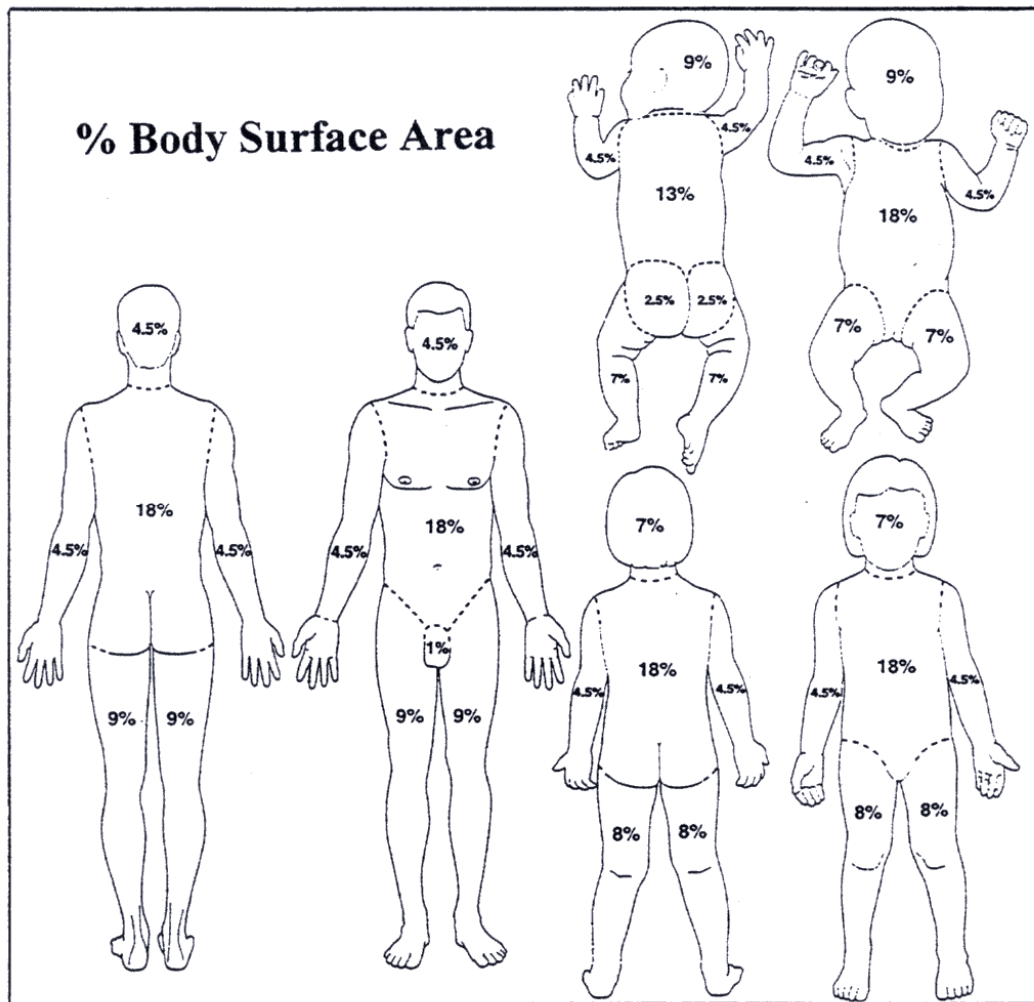
# ILLINOIS EMSC

## PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL)

### EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



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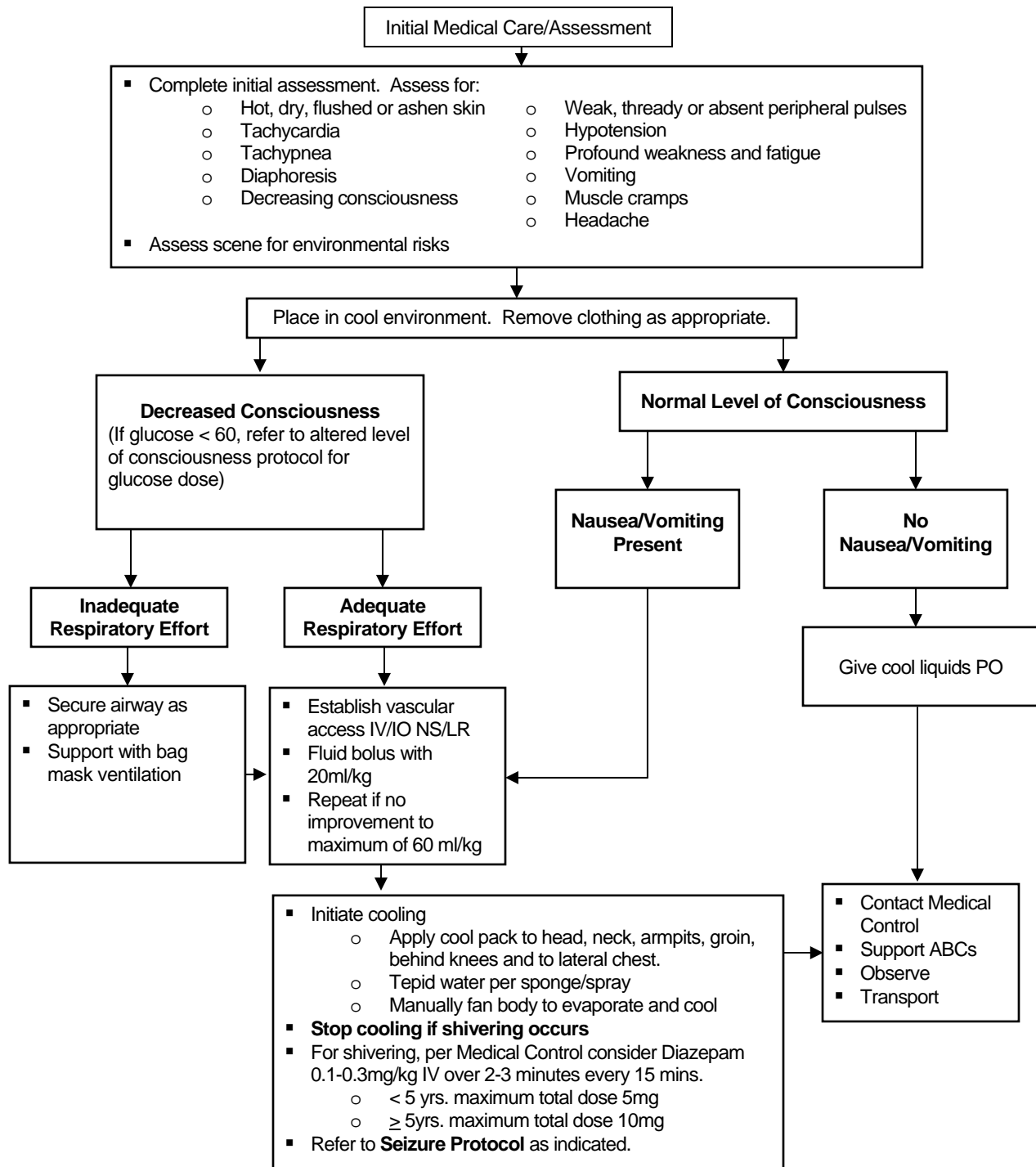
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9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention



ILLINOIS EMSC  
PEDIATRIC ENVIRONMENTAL HYPERTHERMIA  
ALS/ILS CARE GUIDELINE

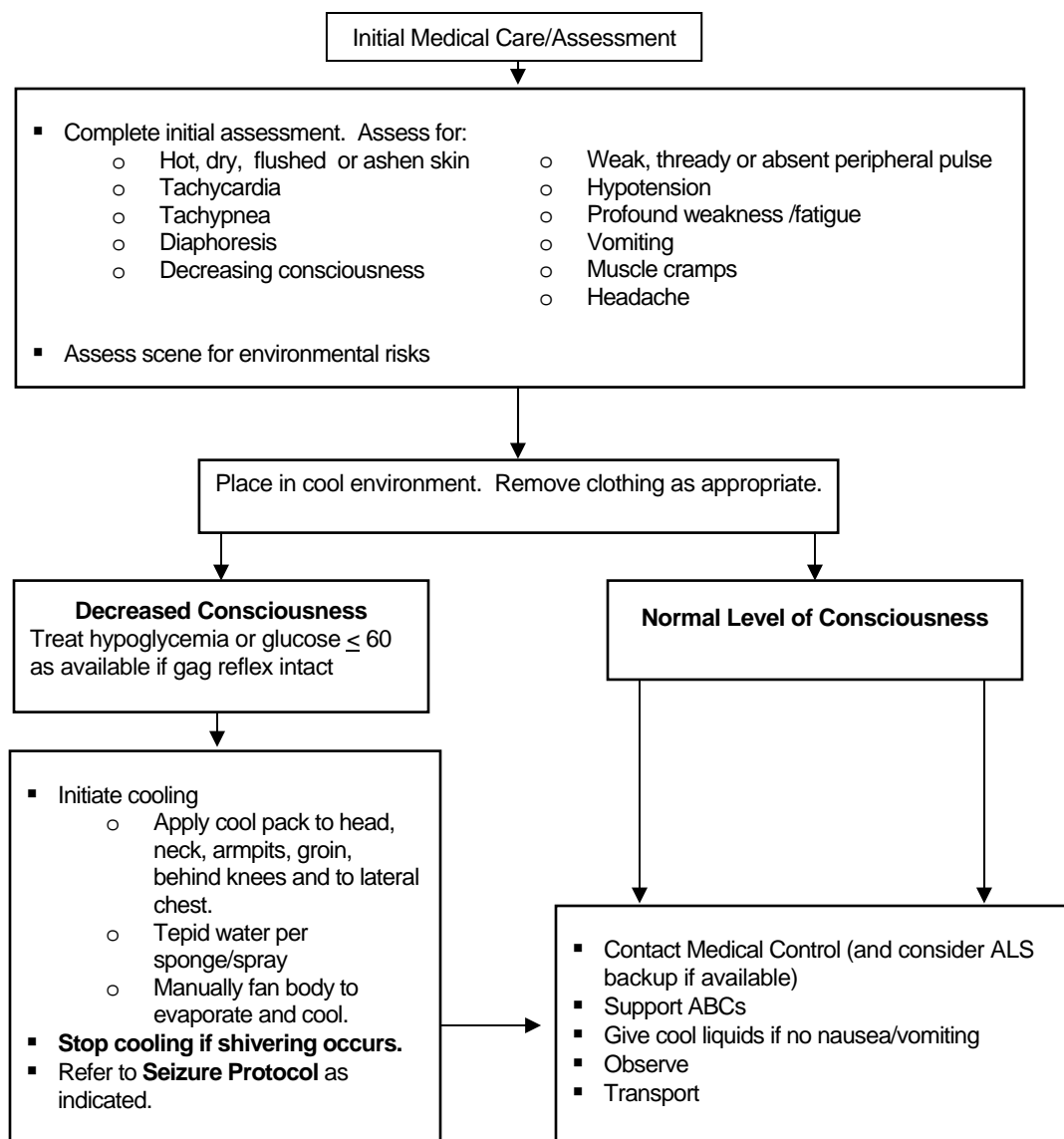


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# ILLINOIS EMSC

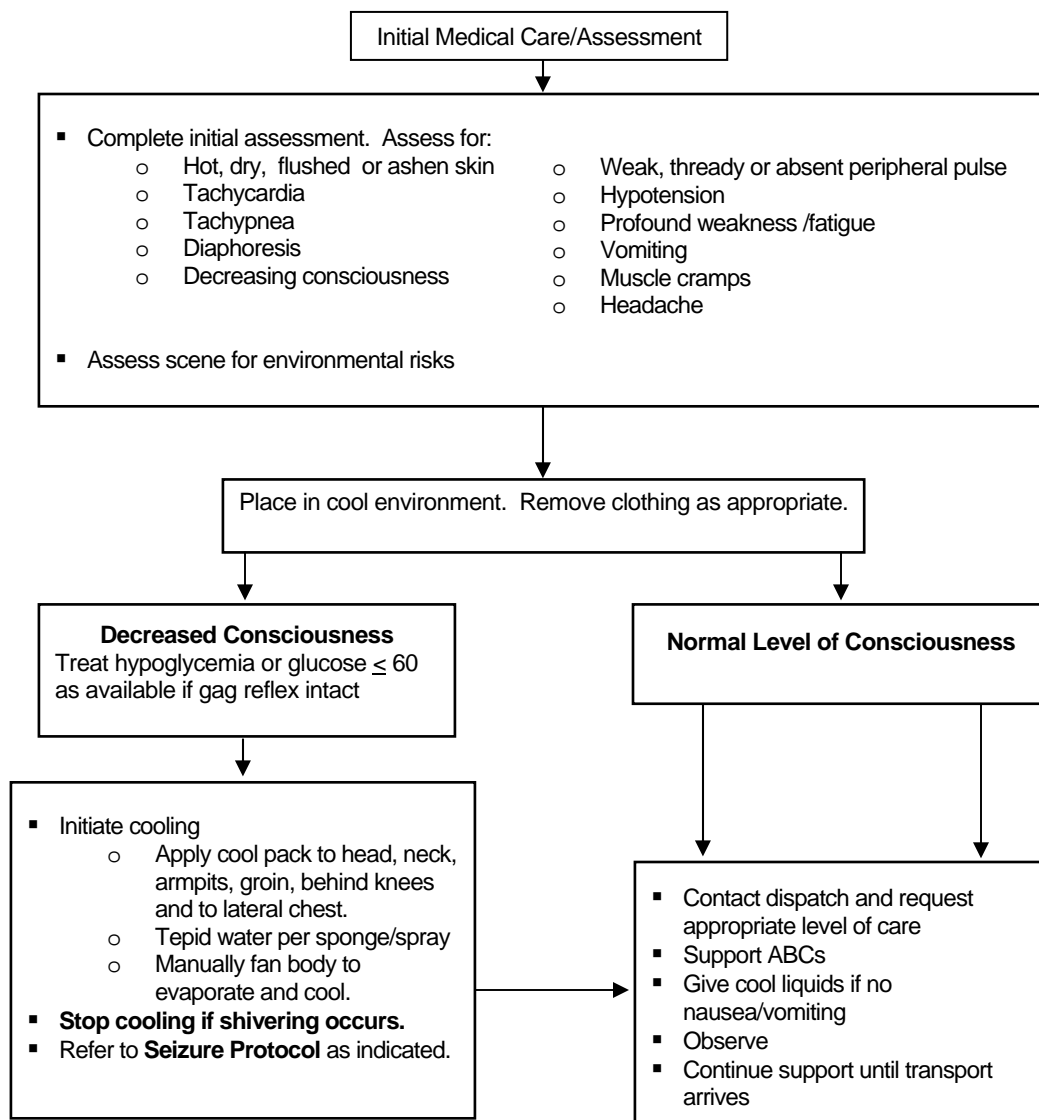
## PEDIATRIC ENVIRONMENTAL HYPERTHERMIA

### BLS CARE GUIDELINE



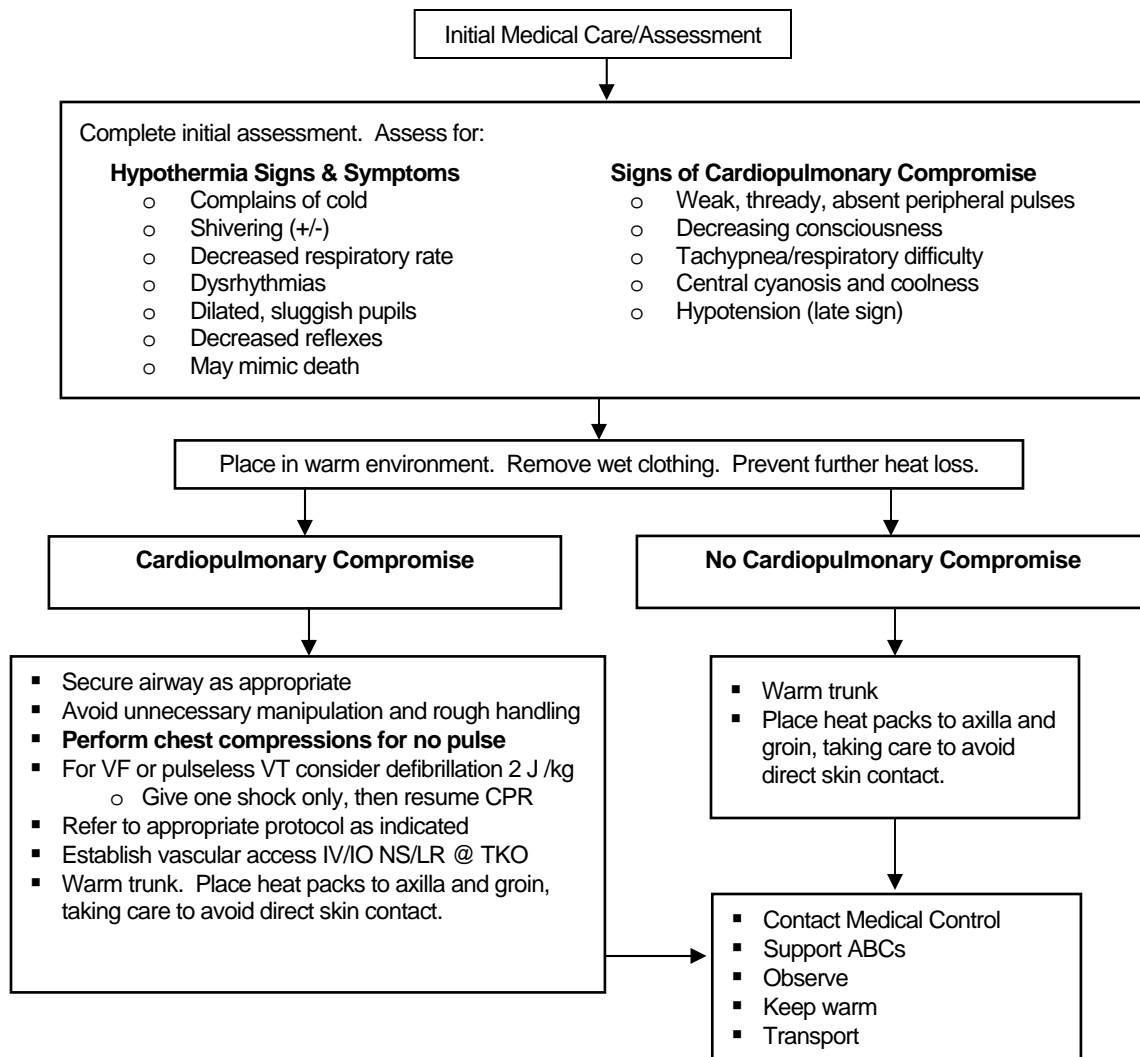
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ILLINOIS EMSC  
PEDIATRIC ENVIRONMENTAL HYPERTHERMIA  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



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ILLINOIS EMSC  
PEDIATRIC HYPOTHERMIA  
ALS/ILS CARE GUIDELINE

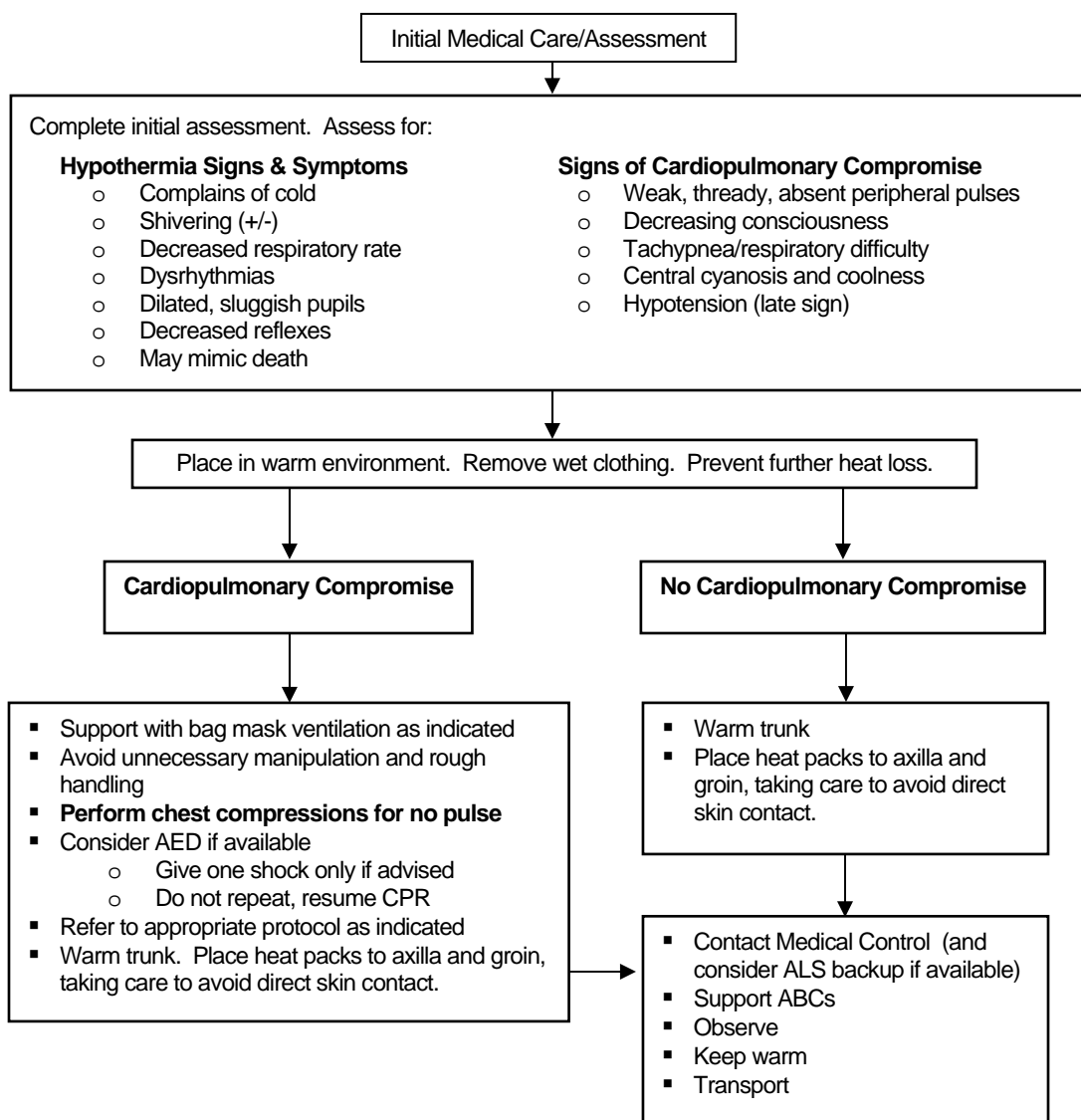


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# ILLINOIS EMSC

## PEDIATRIC HYPOTHERMIA

### BLS CARE GUIDELINE

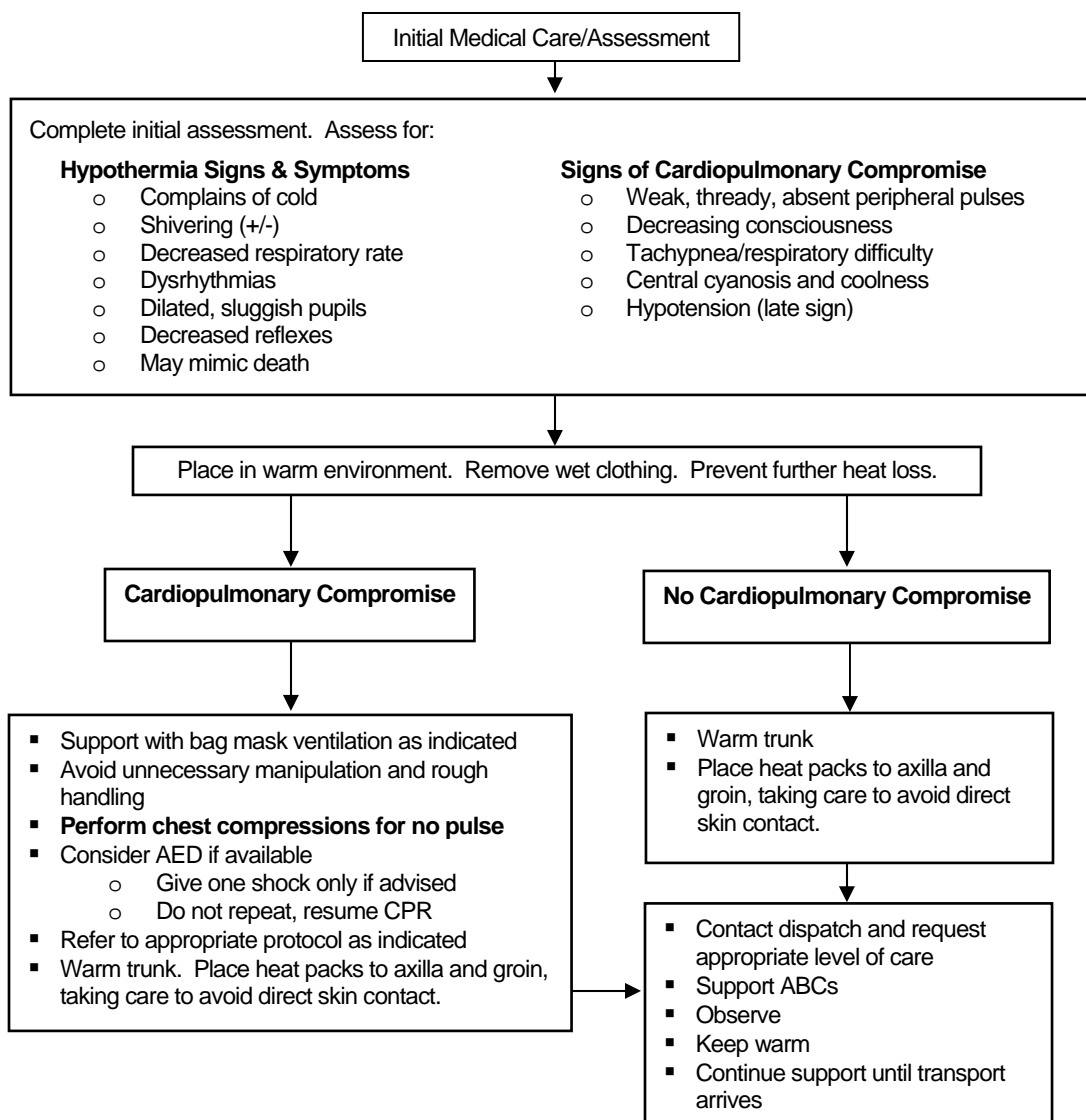


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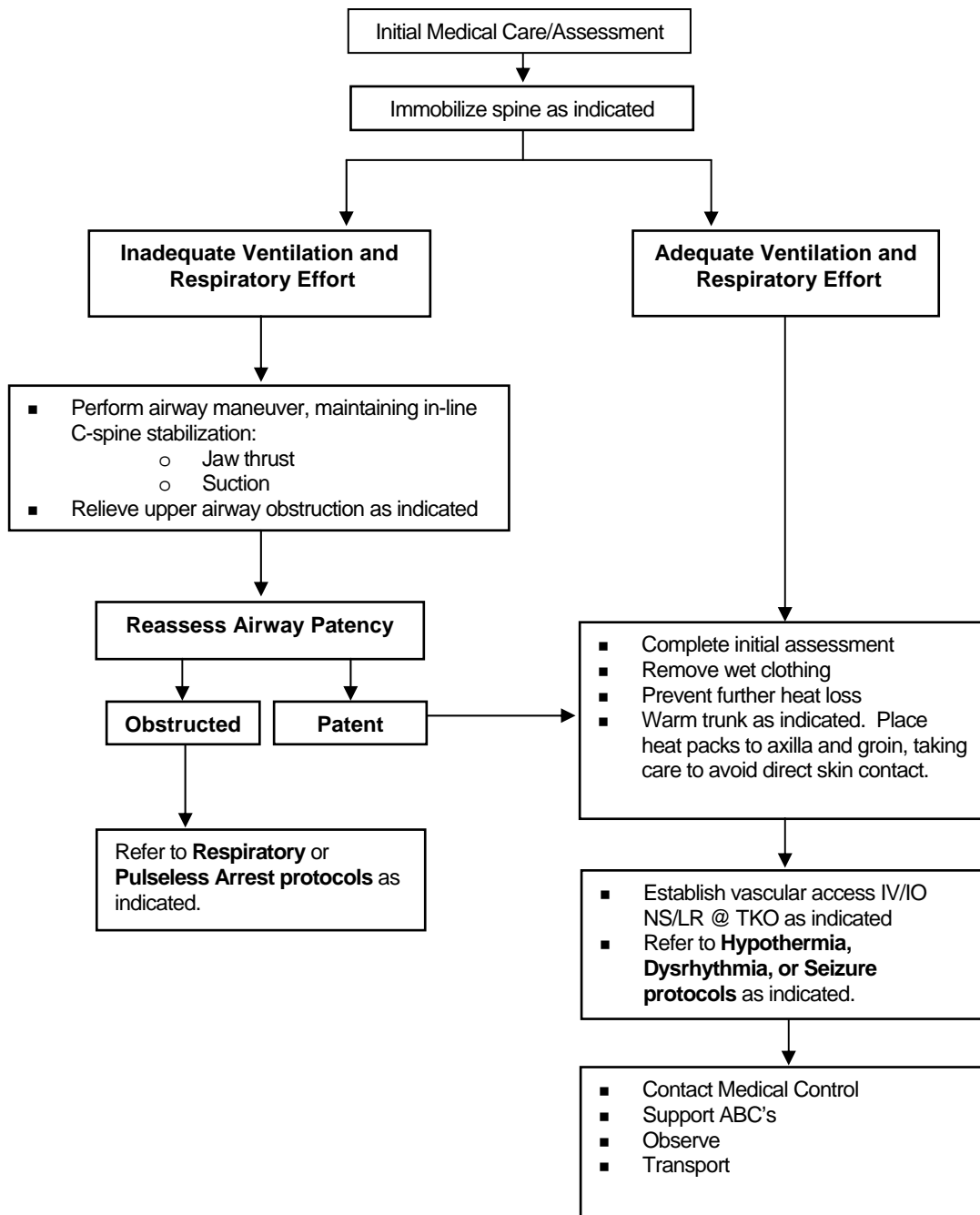
## PEDIATRIC HYPOTHERMIA

### EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



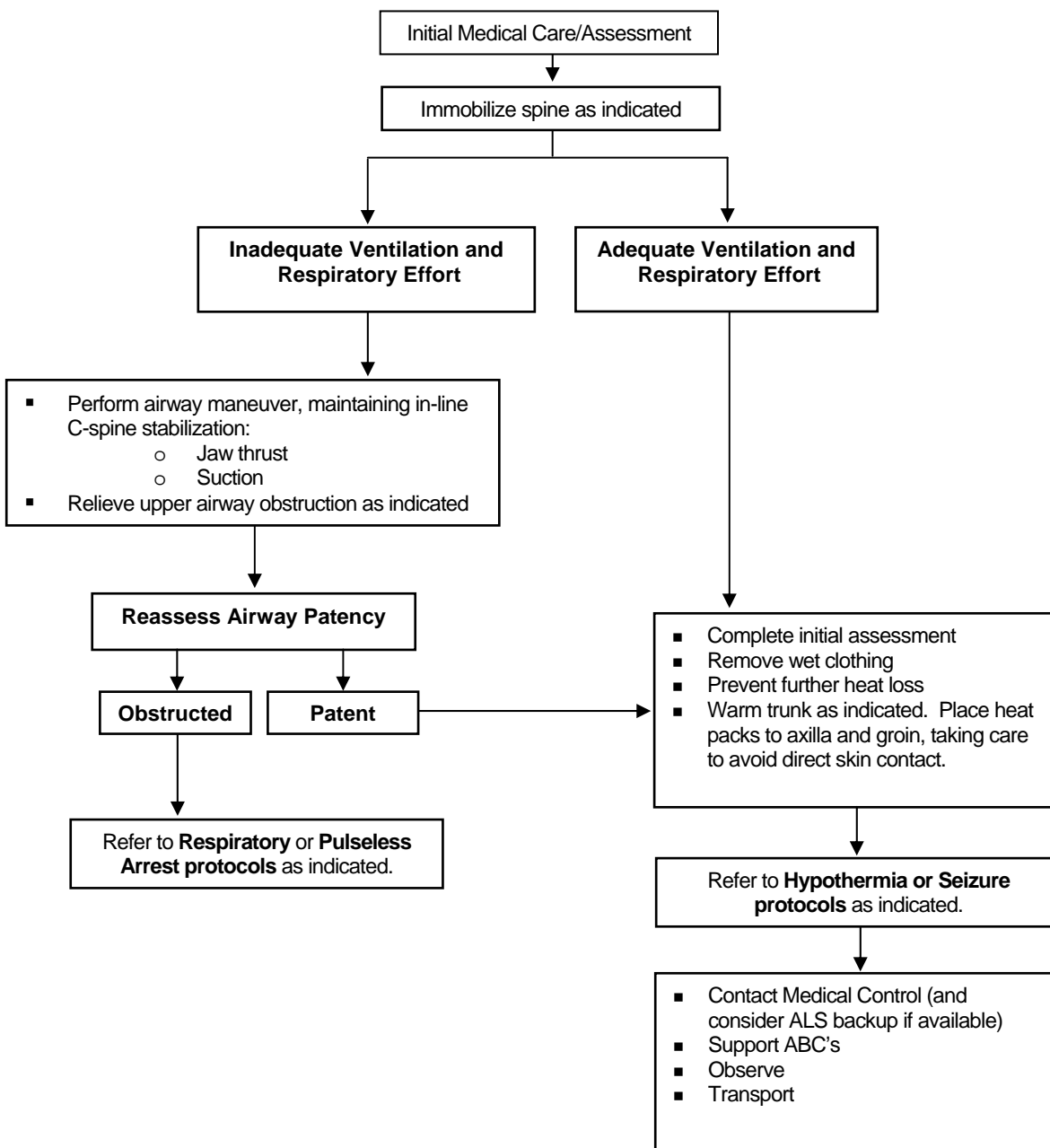
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ILLINOIS EMSC  
PEDIATRIC NEAR DROWNING  
ALS/ILS CARE GUIDELINE



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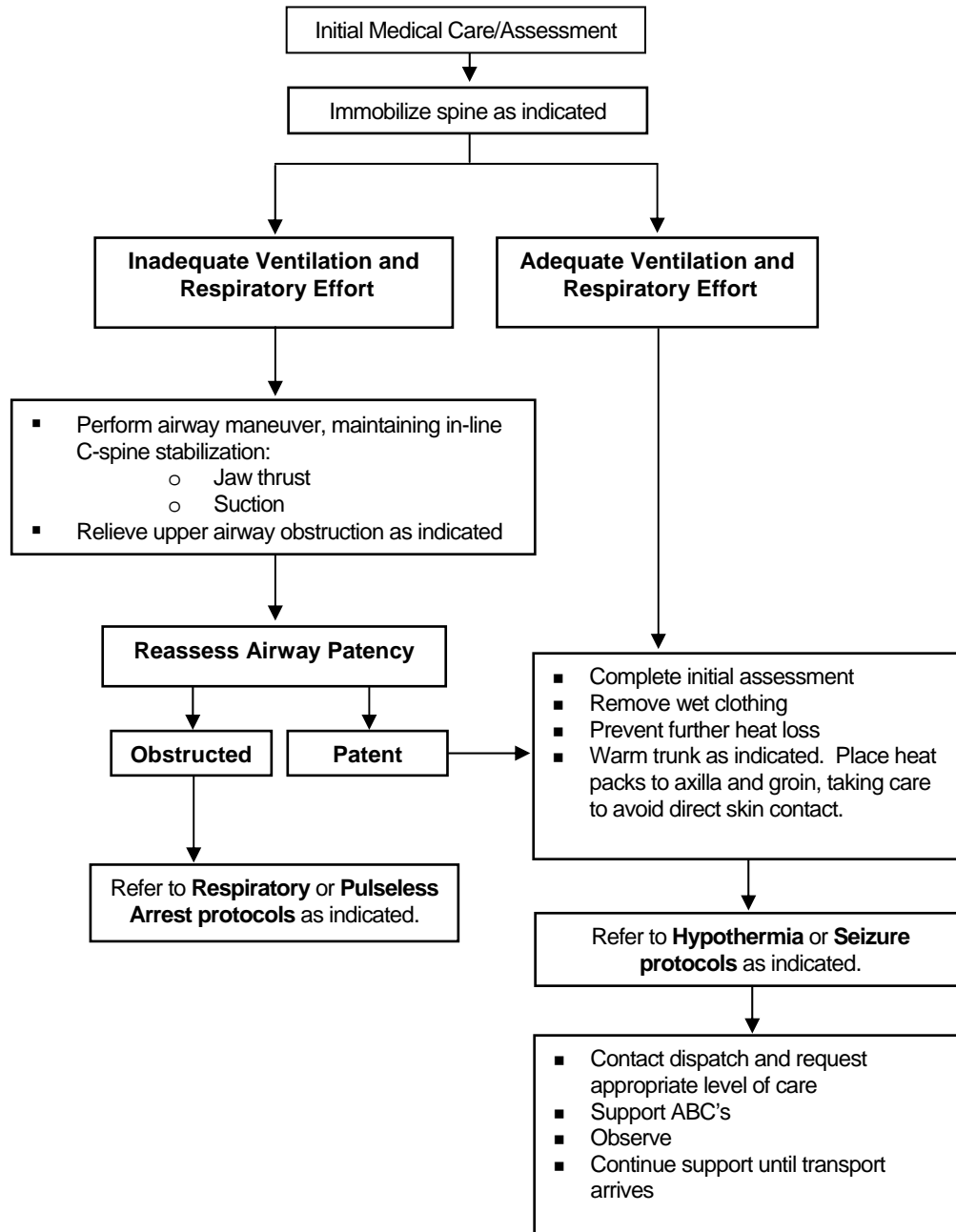
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PEDIATRIC NEAR DROWNING  
BLS CARE GUIDELINE



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ILLINOIS EMSC  
PEDIATRIC NEAR DROWNING  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



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# ILLINOIS EMSC

## PEDIATRIC NERVE AGENT

### ANTIDOTE GUIDELINE

PATIENT AGE		ANTIDOTES (IV/IM)	
		MILD/MODERATE	SEVERE
INFANT	0-6 months ( $< 7$ kg)	0.25mg Atropine 2 PAM <sup>†</sup> 15 mg/kg	0.5mg Atropine* 2 PAM <sup>†</sup> 25 mg/kg
	7 months-2 years (7-13 kg)	0.5mg Atropine* 2 PAM <sup>†</sup> 15 mg/kg	1mg Atropine* 300 mg 2 PAM <sup>†</sup>
CHILD	3-7yrs (14-25kg)	1mg Atropine* 300mg 2 PAM <sup>†</sup>	2mg Atropine 600 mg 2 PAM <sup>†</sup>
	8-14 yrs (26-50kg)	2mg Atropine 600 mg 2 PAM <sup>†</sup>	4mg Atropine 1200 mg 2 PAM <sup>†</sup>
ADOLESCENT	$> 14$ yrs ( $> 51$ kg)	2mg Atropine 600 mg 2 PAM <sup>†</sup>	4mg Atropine 1200 mg 2 PAM <sup>†</sup>

\* Appropriate dose Atropen auto injector can be used **if available**

<sup>†</sup> 2 PAM=Pralidoxime

DENOTES ONE MARK I KIT

2mg Atropine  
600mg 2 PAM<sup>†</sup>

DENOTES TWO MARK I KITS

4mg Atropine  
1200 mg 2 PAM<sup>†</sup>

#### NOTES:

For nerve agents the doses are:

- Atropine dose 0.05 mg/kg
- 2 PAM<sup>†</sup> dose 25 mg/kg

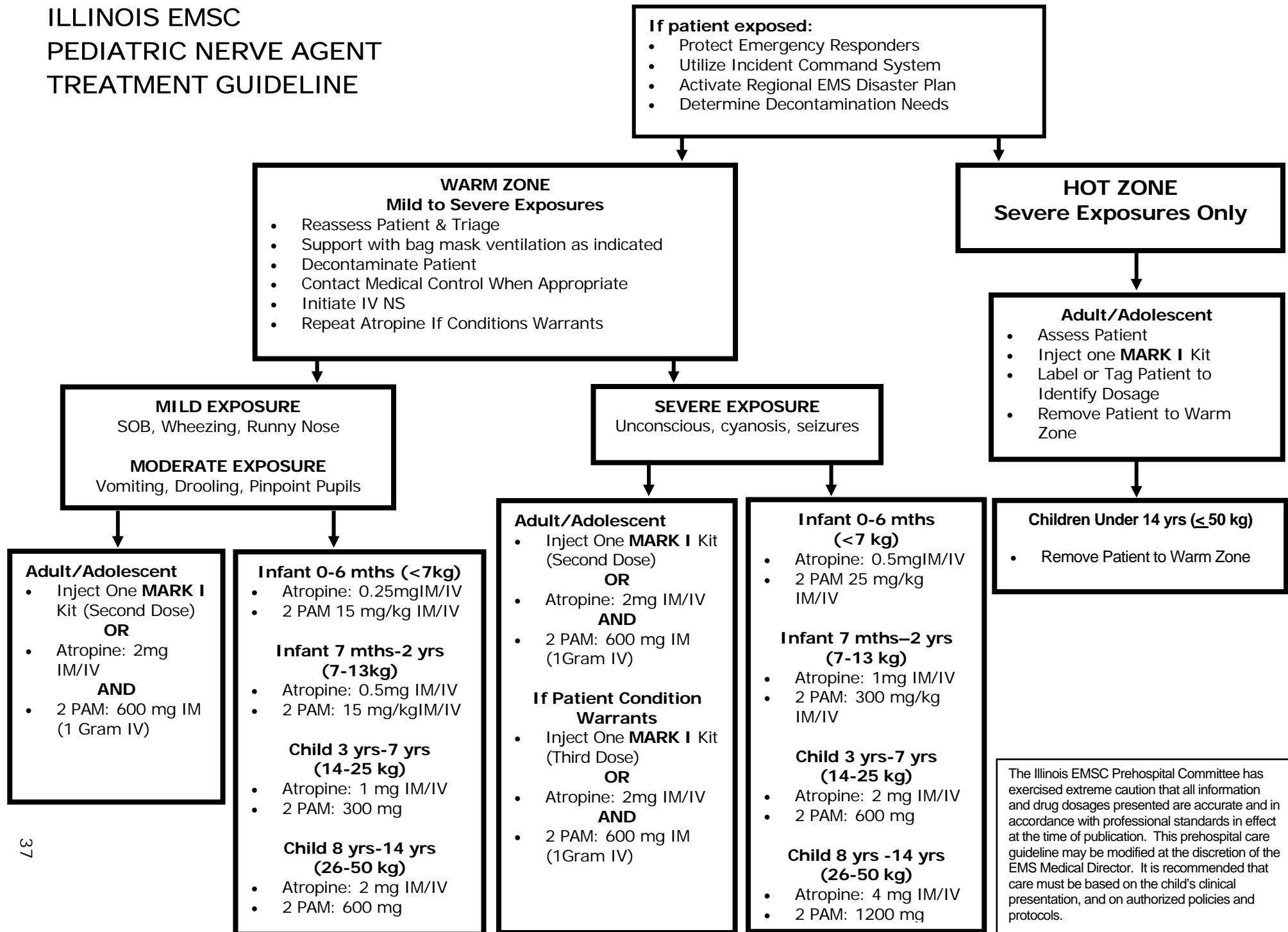
For children  $> 3$  yrs with severe symptoms:

- 1 Mark I Kit will give 0.08 — 0.13 mg/kg Atropine
- 24-46 mg/kg 2 PAM<sup>†</sup>

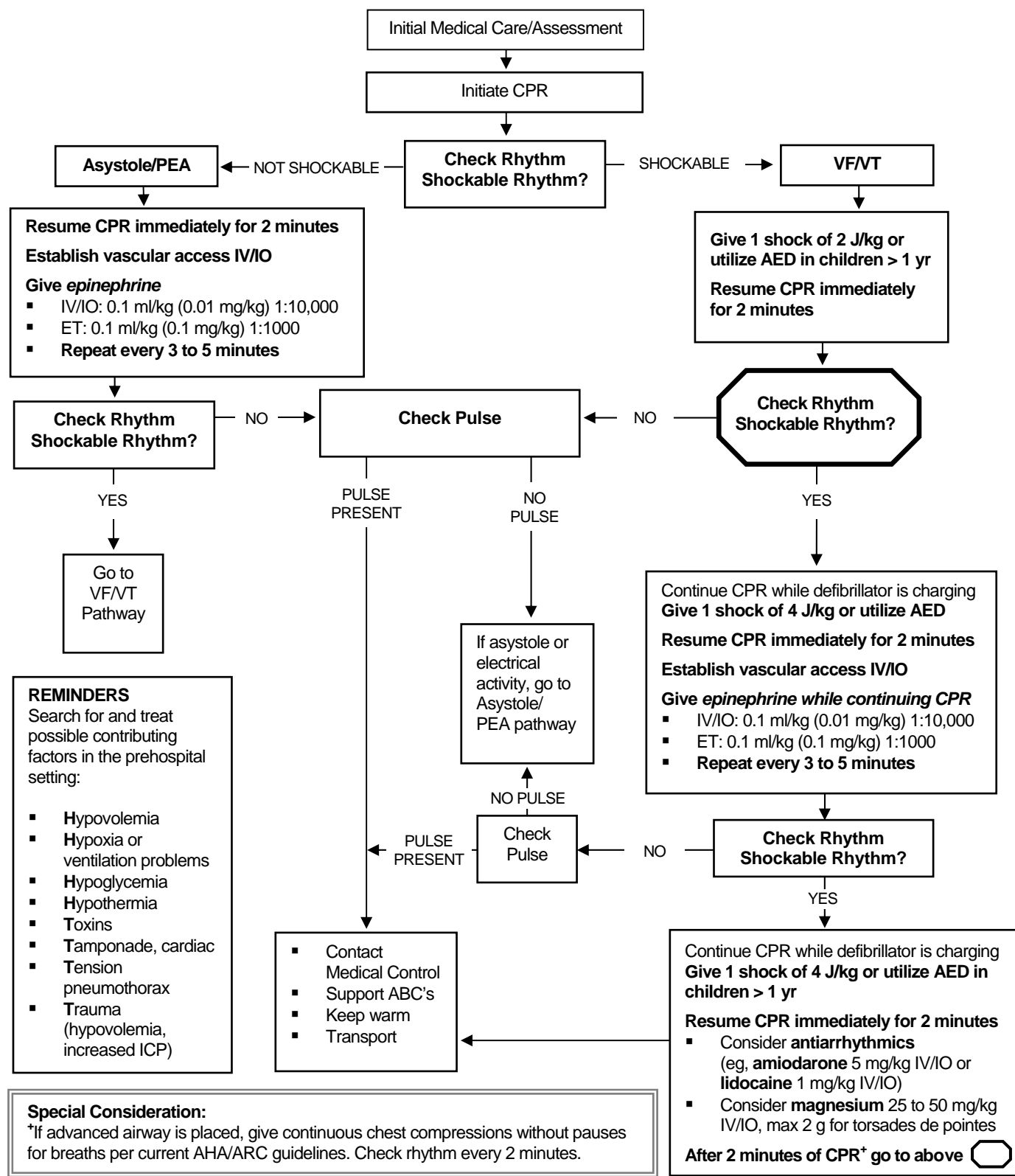
2 PAM<sup>†</sup> solution can be prepared from the vial containing 1 gram of dessicated 2 PAM<sup>†</sup>. Inject 3 ml of NS or sterile water into the vial and shake well. This results in 3.3ml of 300 mg/ml.

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# ILLINOIS EMSC PEDIATRIC NERVE AGENT TREATMENT GUIDELINE

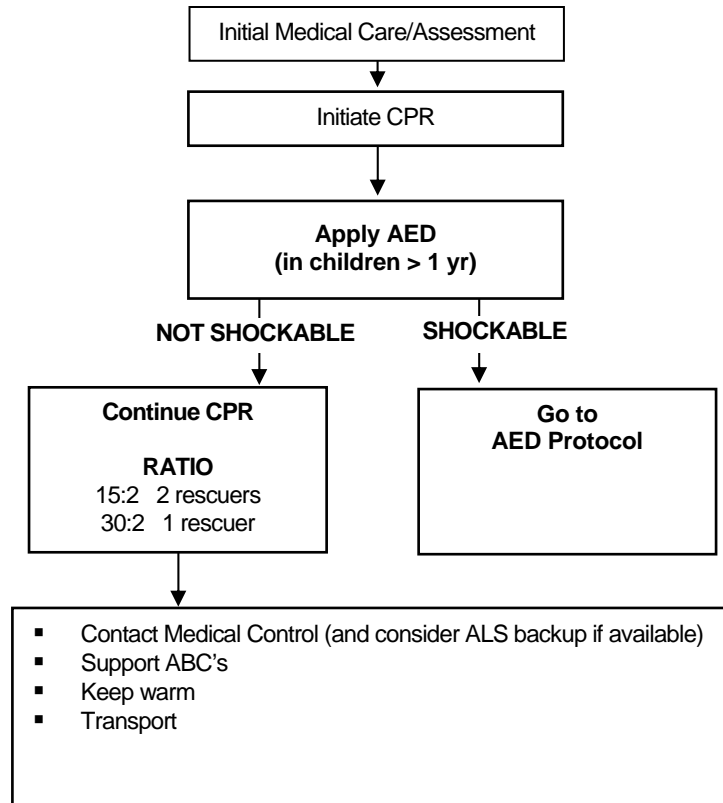


# ILLINOIS EMSC PULSELESS ARREST ALS/ILS CARE GUIDELINE



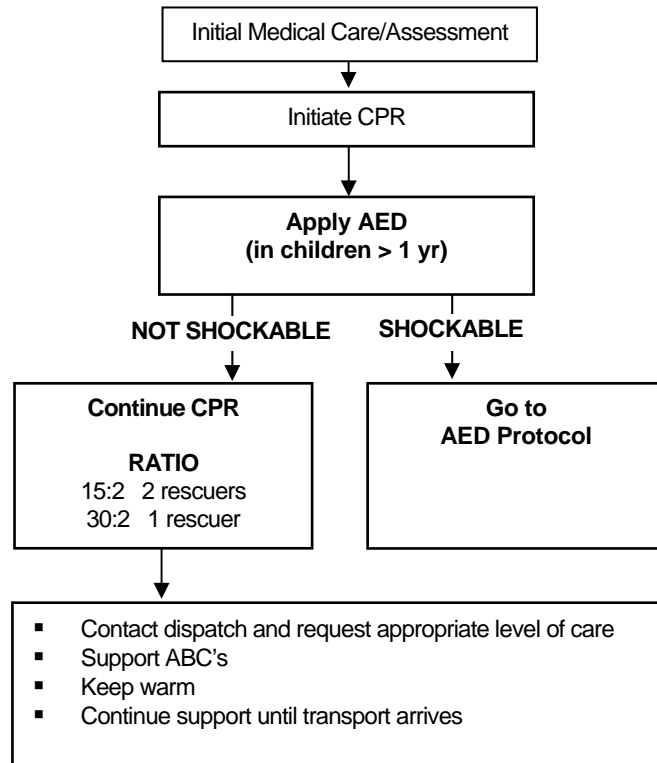
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ILLINOIS EMSC  
PULSELESS ARREST  
BLS CARE GUIDELINE



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ILLINOIS EMSC  
PULSELESS ARREST  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

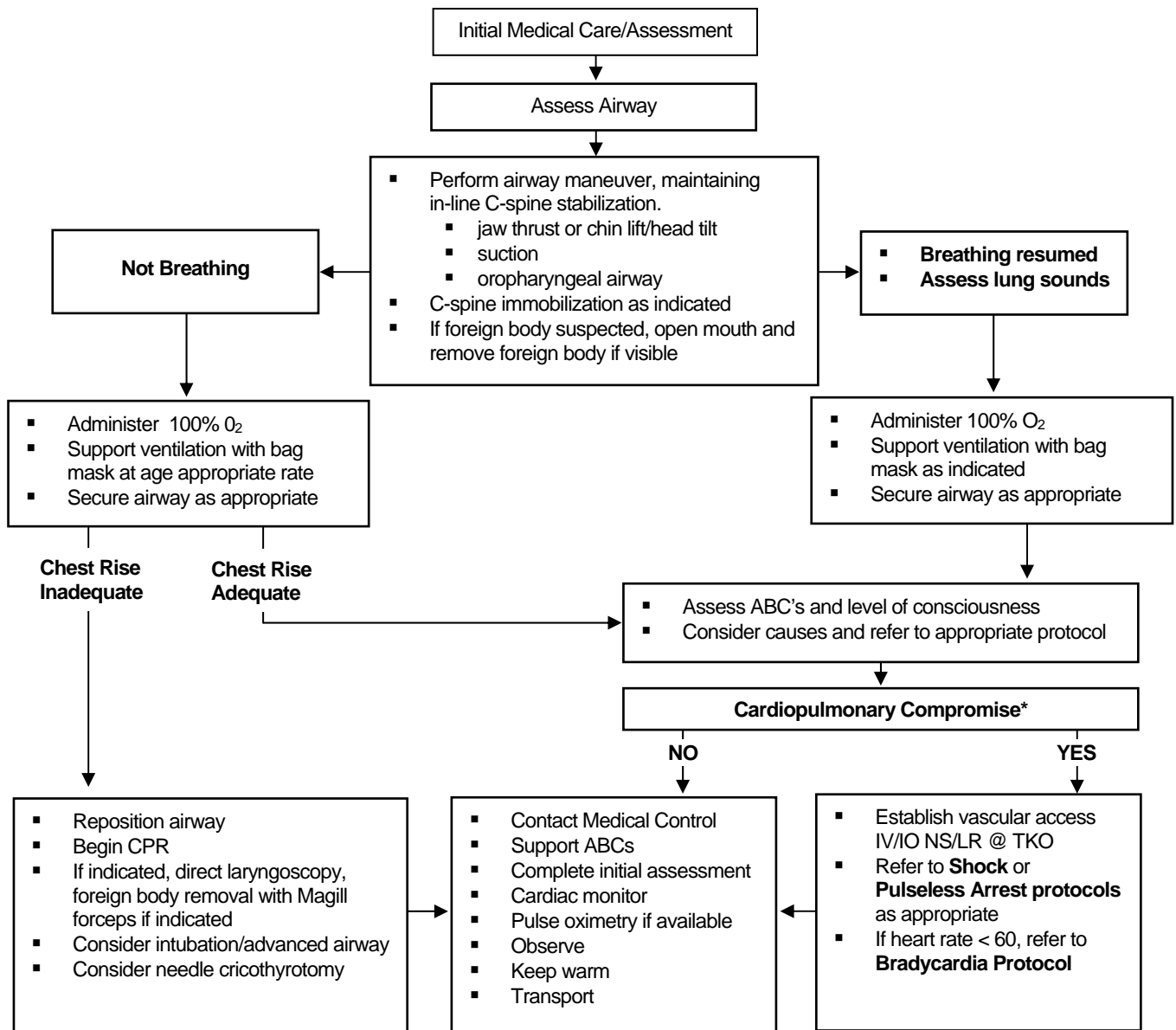


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# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY ARREST

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

- Respiratory arrest may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis.
- Consider **naloxone**, **flumazenil** or **glucose** per Medical Control.

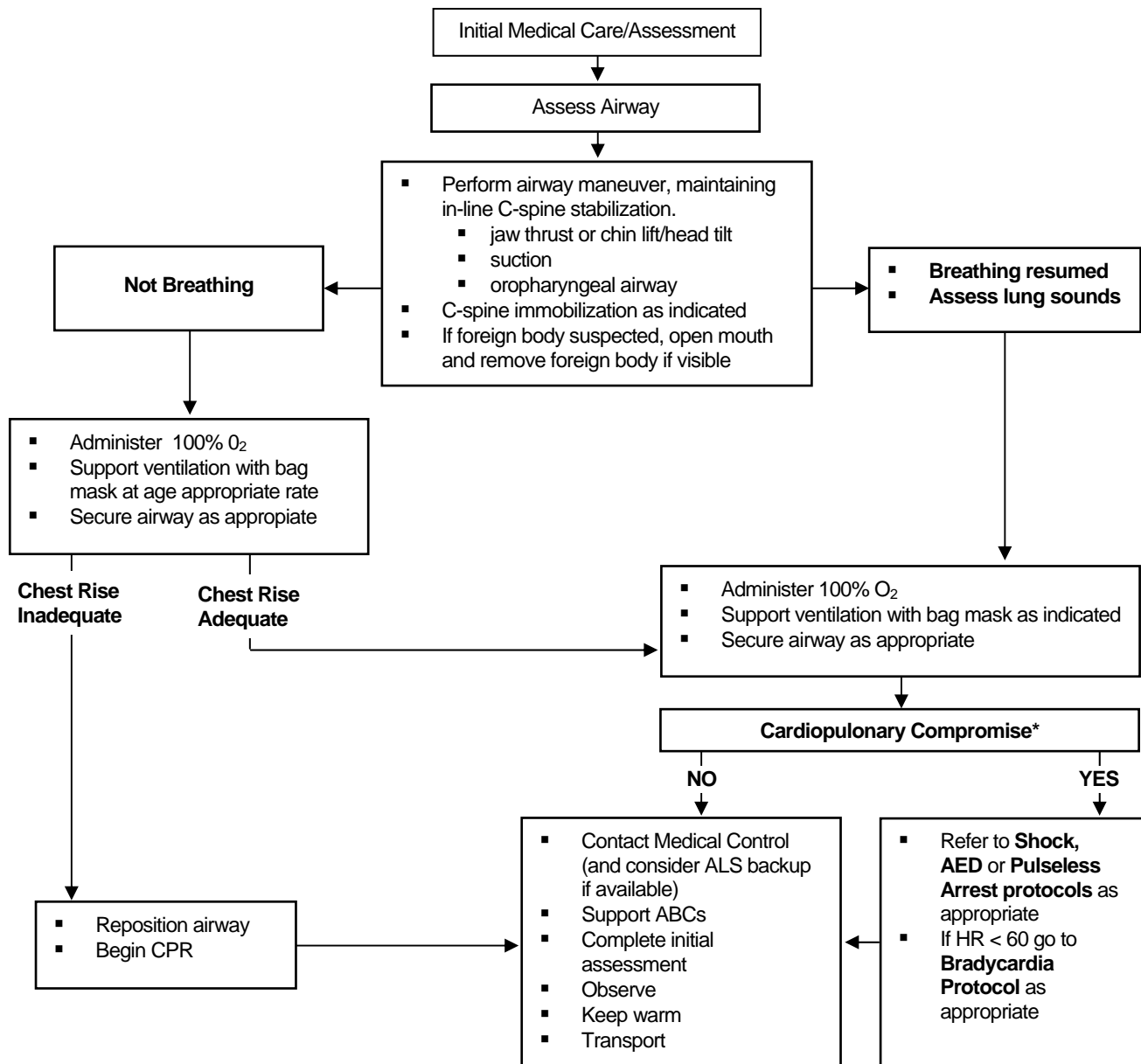
\*Refer to Vital Signs and Cardiopulmonary Compromise Resource for signs and symptoms of decreased perfusion in children.

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# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY ARREST

### BLS CARE GUIDELINE



#### Special Considerations:

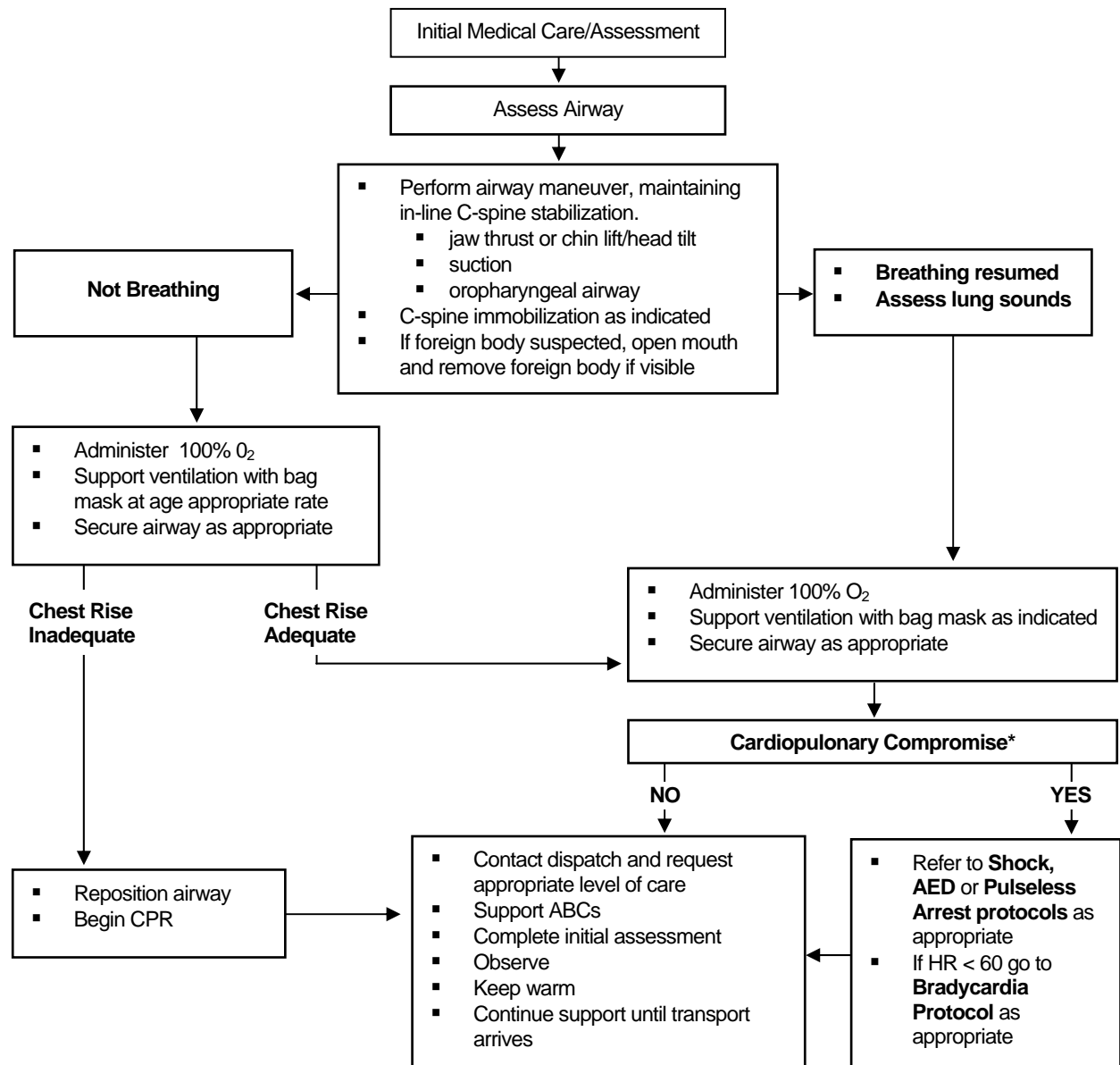
- Respiratory arrest may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis.
- Refer to Respiratory Distress Protocol as appropriate.

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ILLINOIS EMSC  
PEDIATRIC RESPIRATORY ARREST  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



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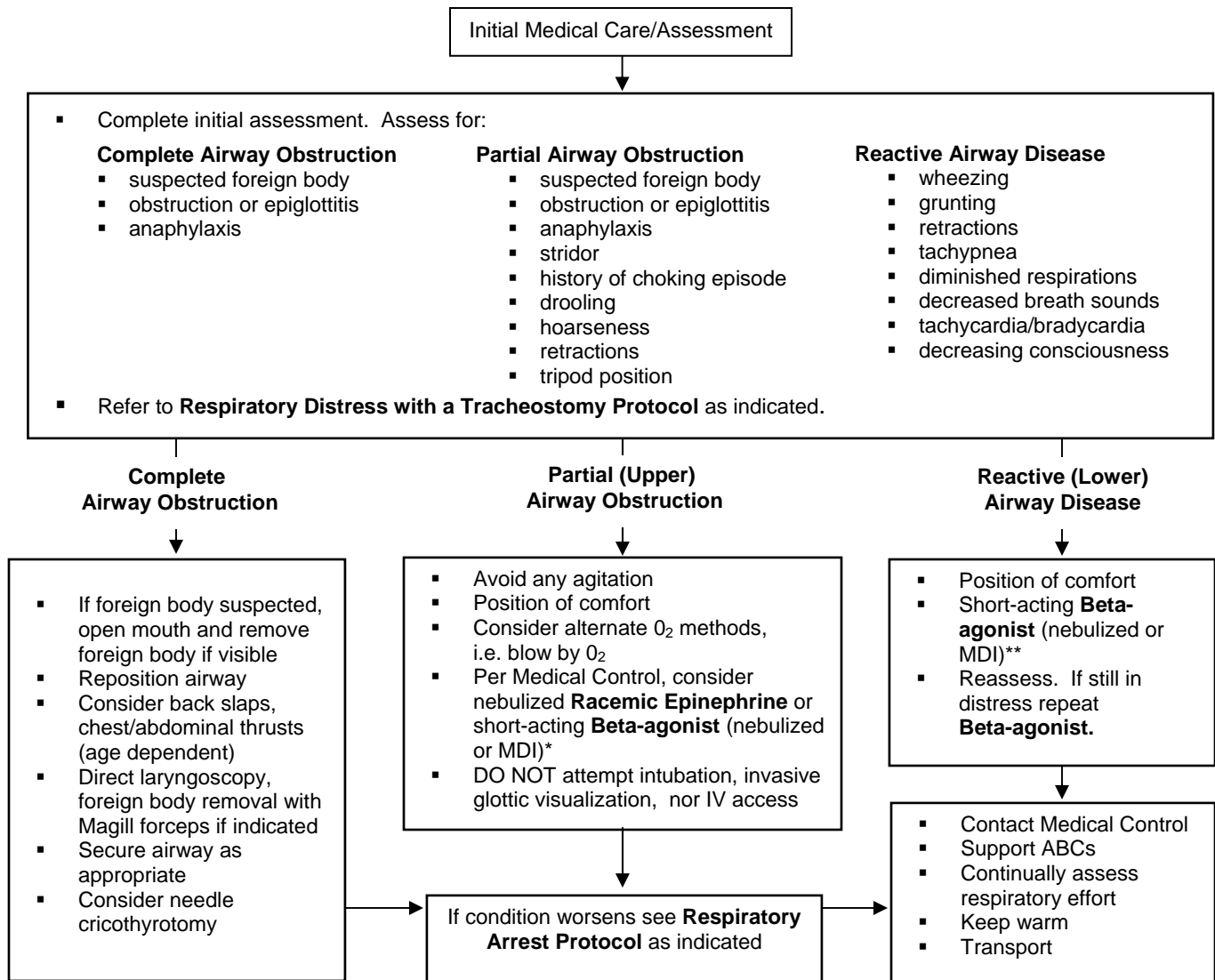
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# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY DISTRESS

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

\*Severe upper airway obstruction secondary to croup may be relieved with nebulized **Racemic Epinephrine** or short acting/nebulized **Beta-agonist** per Medical Control.

\*\***Beta-agonist** MDI inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**.

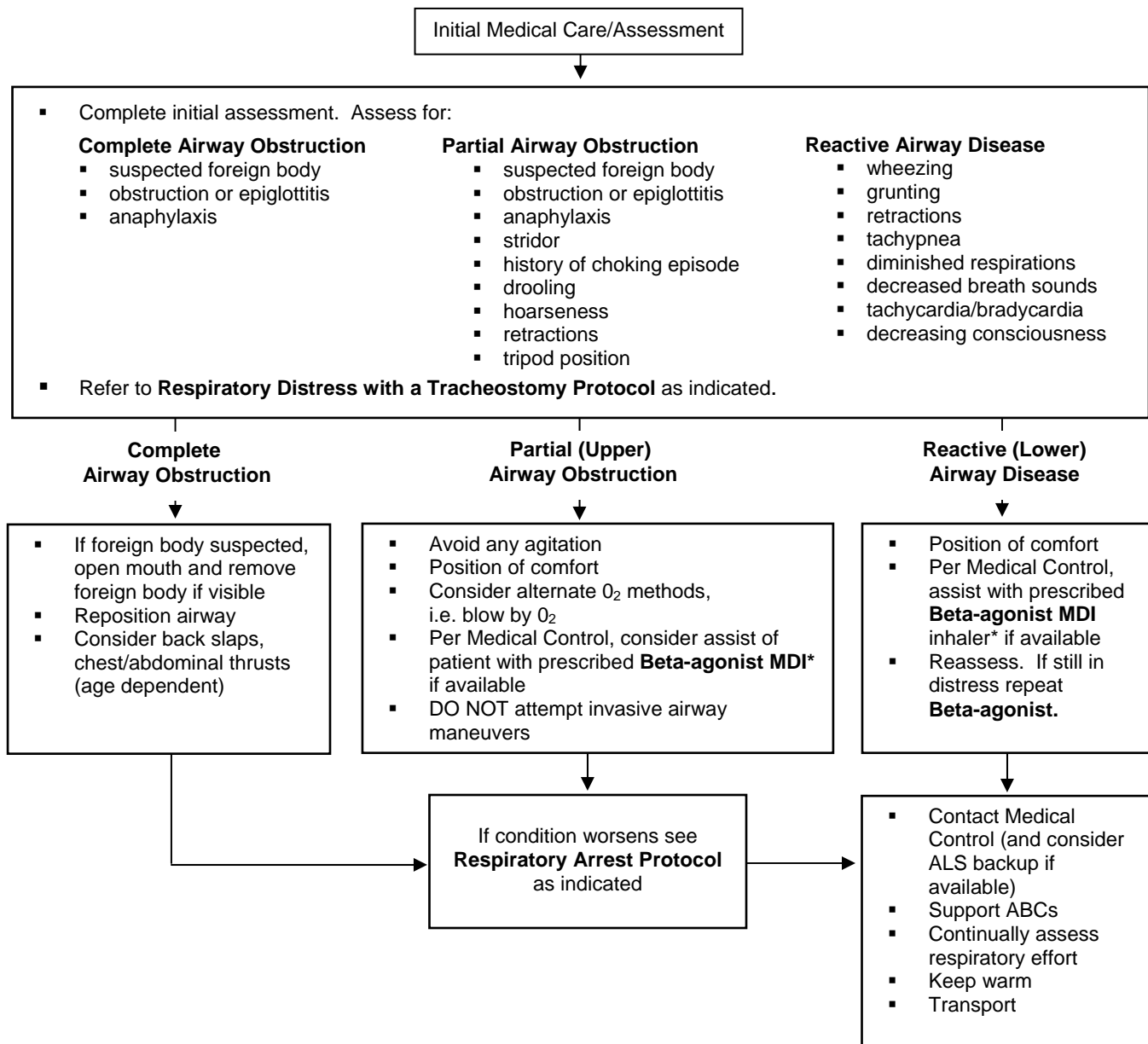
\*\*An inhaler should be administered through a holding chamber or spacer device, if available.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY DISTRESS

### BLS CARE GUIDELINE



#### Special Considerations:

\*Per Medical Control, severe upper airway obstruction secondary to croup may be relieved with **Beta-agonists**.

\***Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**.

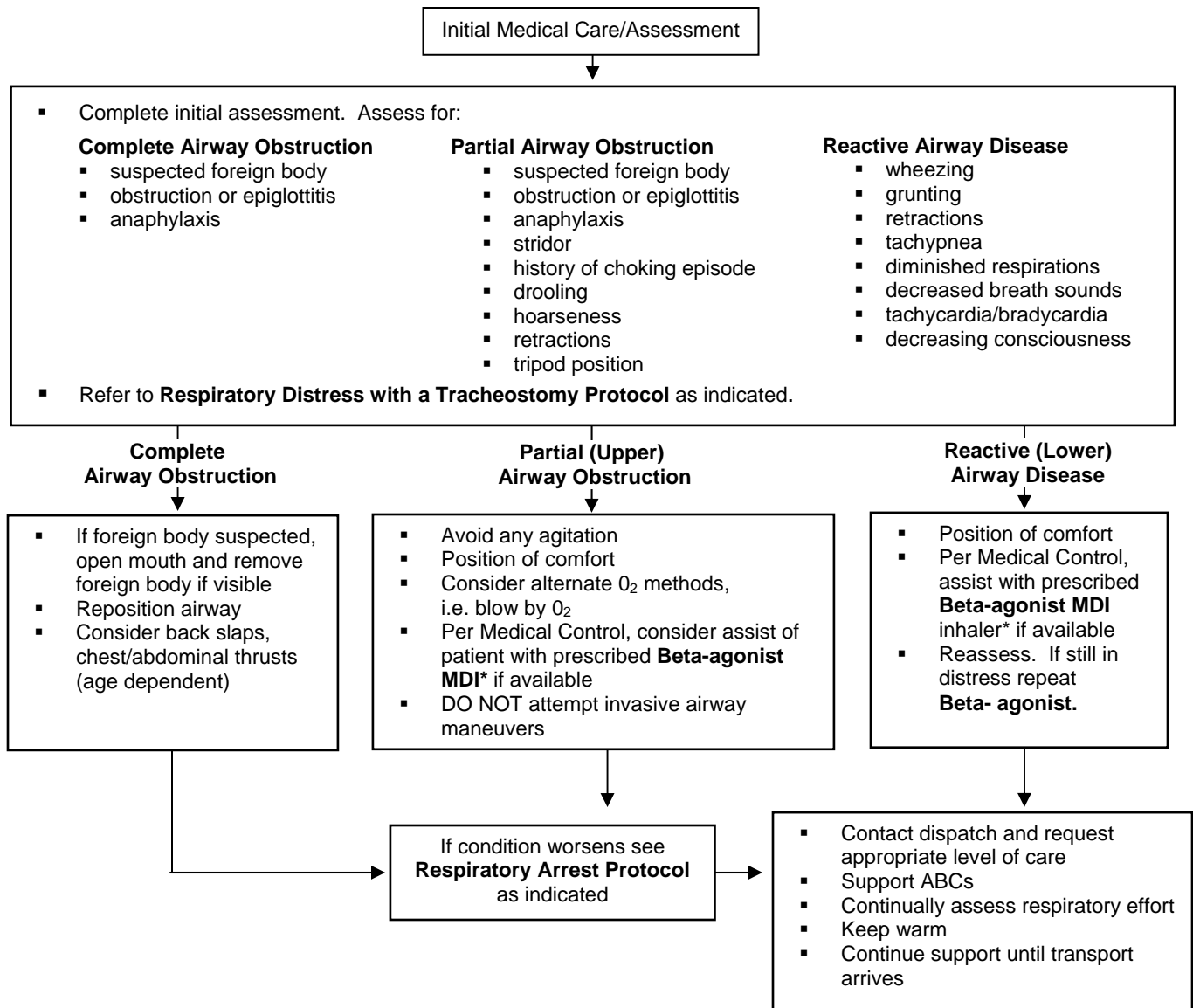
\*An inhaler should be administered through a holding chamber or spacer device, if available.

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# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY DISTRESS

### EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



#### Special Considerations:

\*Per Medical Control, severe upper airway obstruction secondary to croup may be relieved with **Beta-agonists**.

\***Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)**, and **Levalbuterol (Xopenex)**.

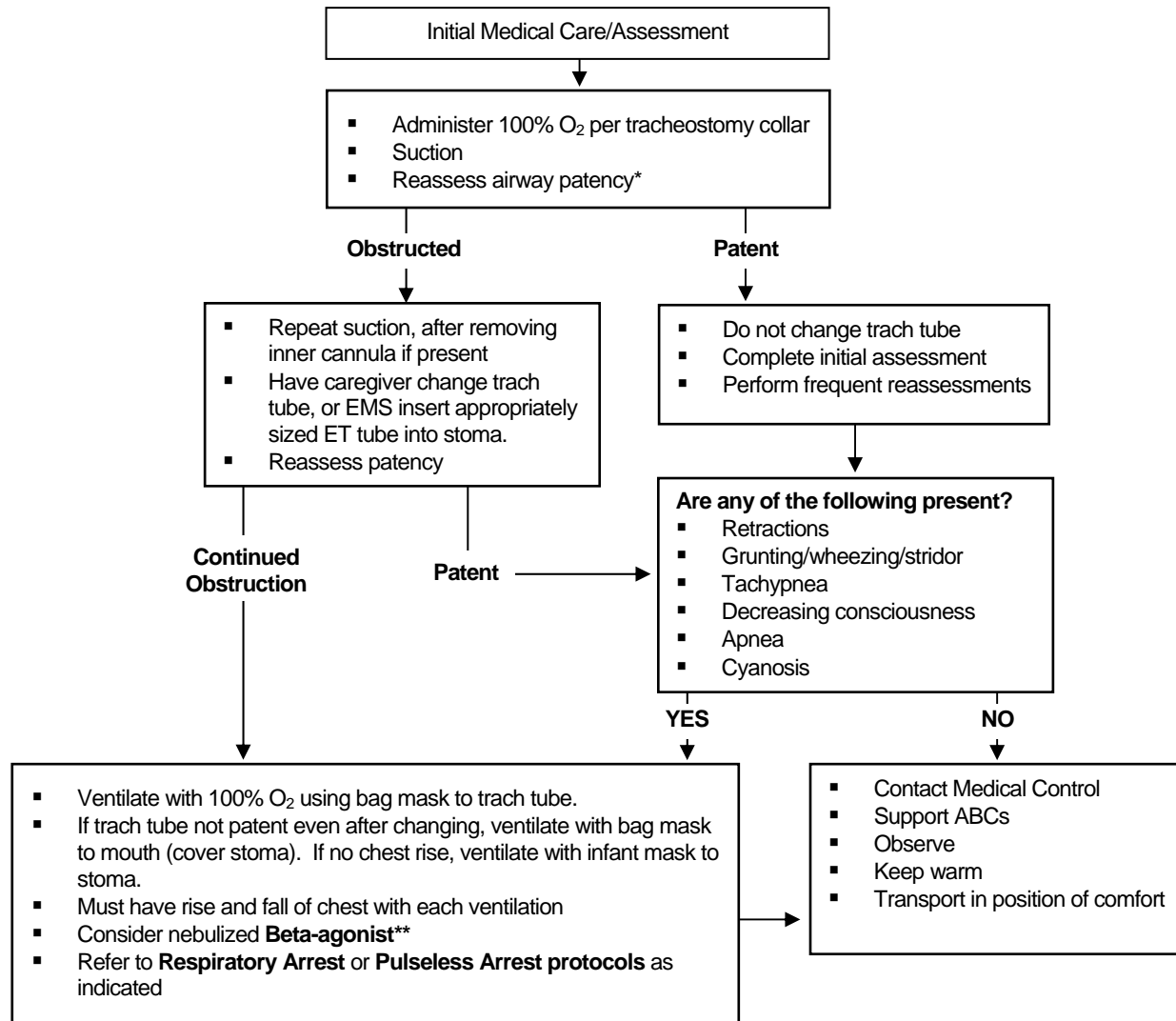
\*An inhaler should be administered through a holding chamber or spacer device, if available.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

\*If chest rise inadequate:

- Reposition the airway.
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

\*\*Only bronchodilator (Beta-agonist MDI) inhalers should be administered.

- **Beta-agonist MDI** inhalers include, among others, **Albuterol (Proventil, Ventolin)** and **Levalbuterol (Xopenex)**.
- An inhaler should be administered through a holding chamber or spacer device, if available.

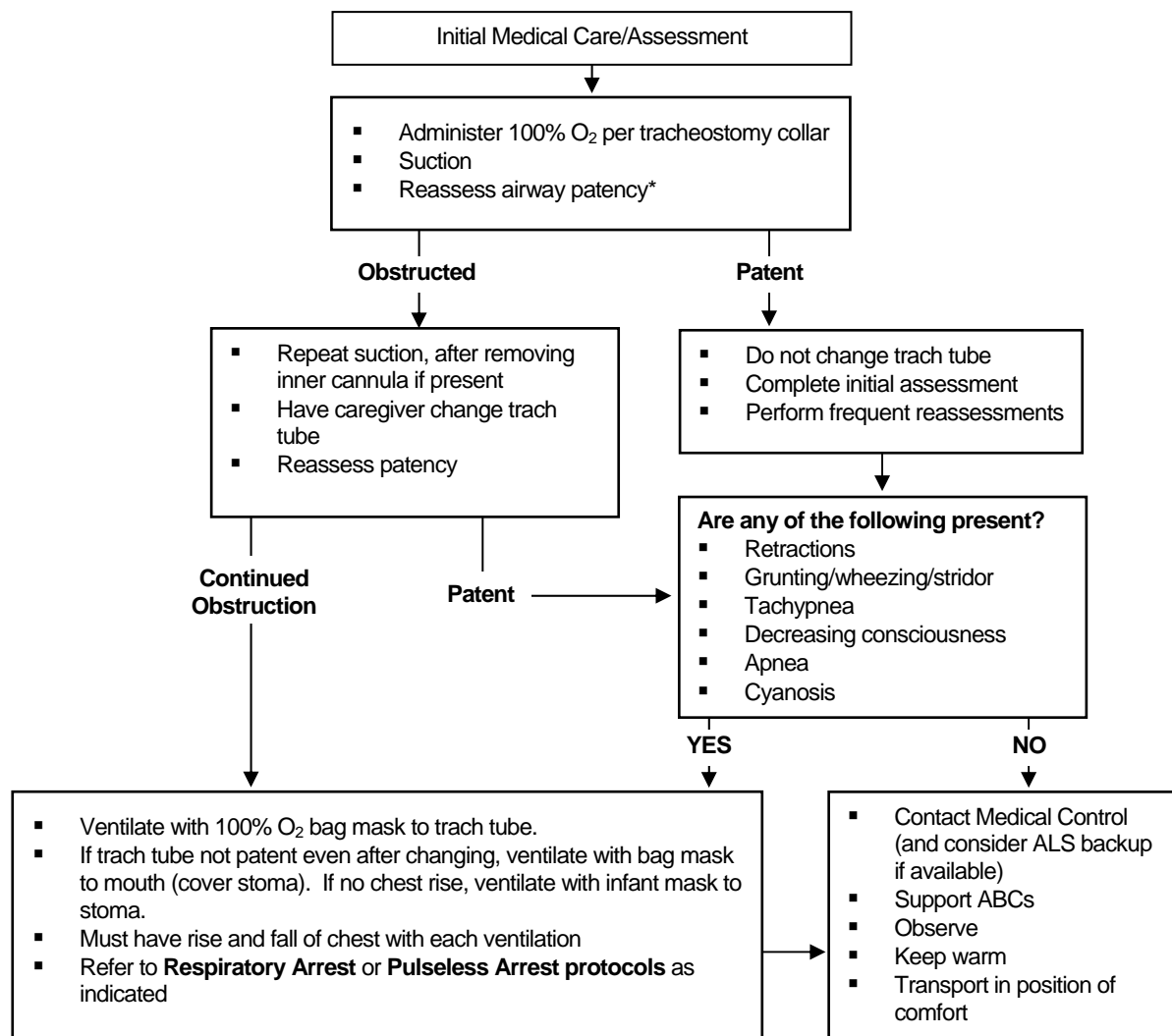
Consider allowing caregiver to remain with child regardless of child's level of responsiveness.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

## ILLINOIS EMSC

### PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE

#### BLS CARE GUIDELINE



#### Special Considerations:

\*If chest rise inadequate:

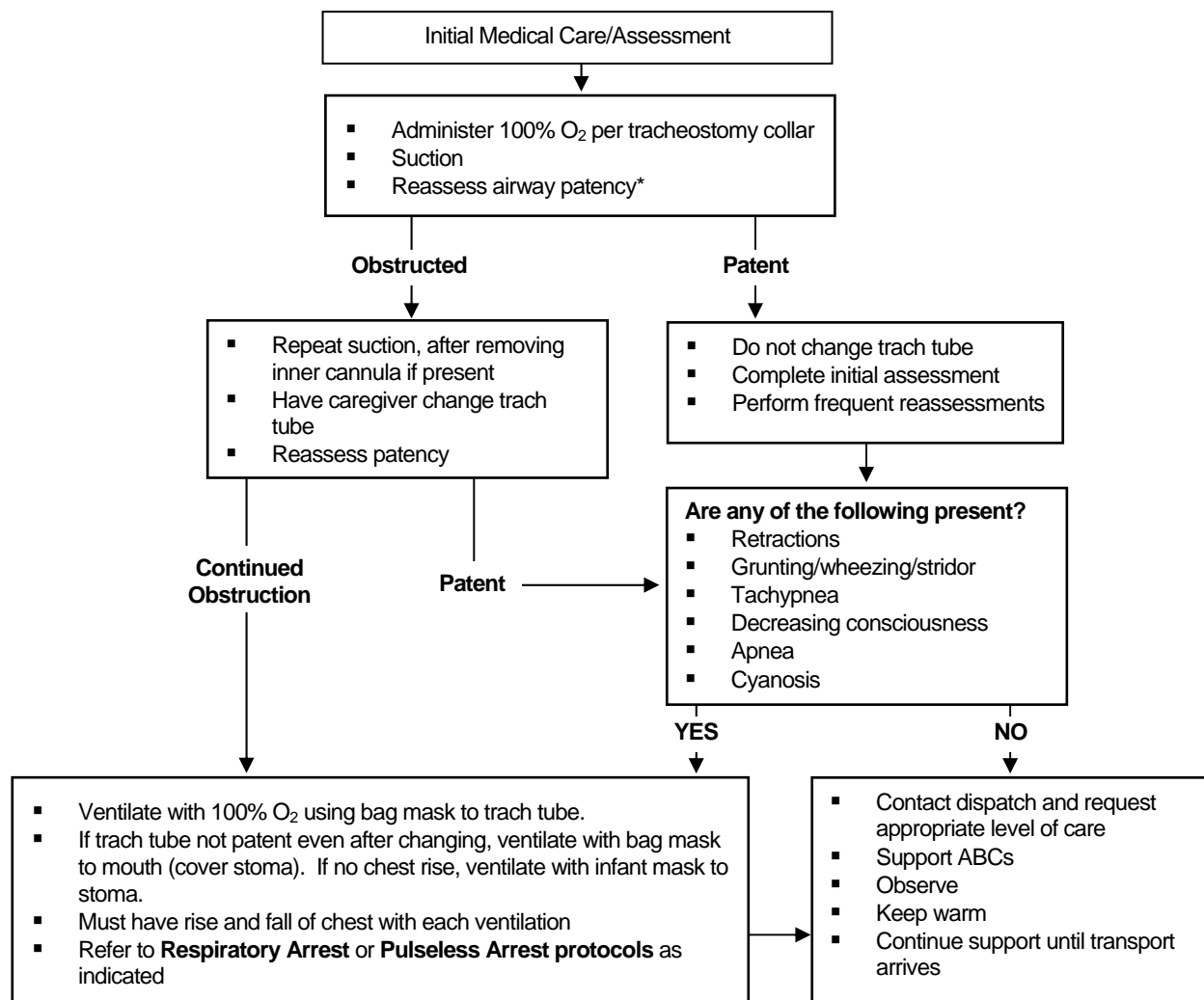
- Reposition the airway.
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

Consider allowing caregiver to remain with child regardless of child's level of responsiveness.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

# ILLINOIS EMSC

## PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



### Special Considerations:

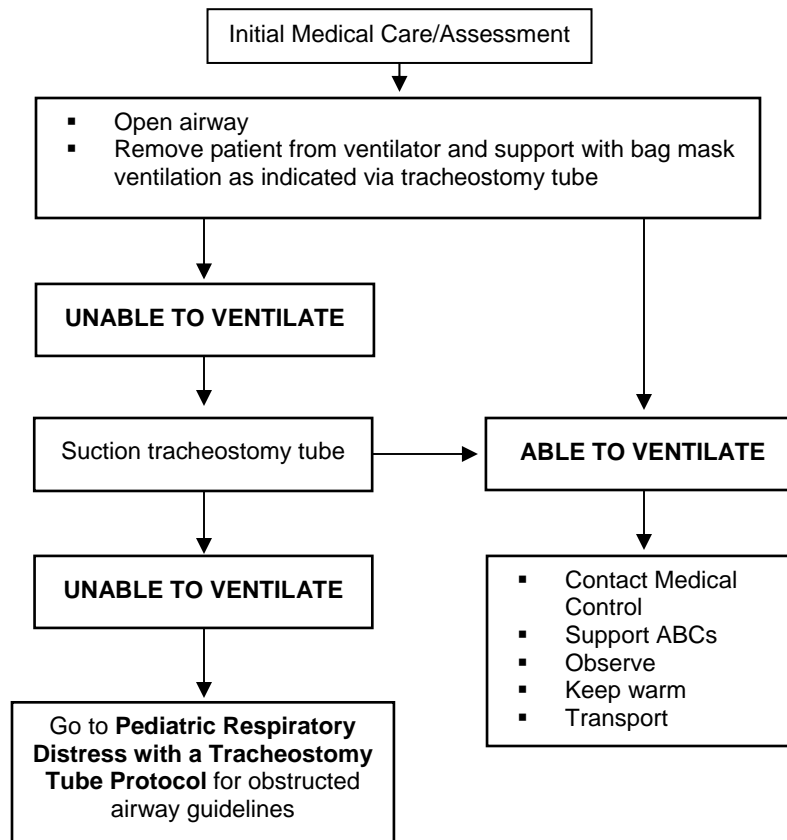
\*If chest rise inadequate:

- Reposition the airway.
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

Consider allowing caregiver to remain with child regardless of child's level of responsiveness.

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ILLINOIS EMSC  
PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR  
ALS/ILS CARE GUIDELINE



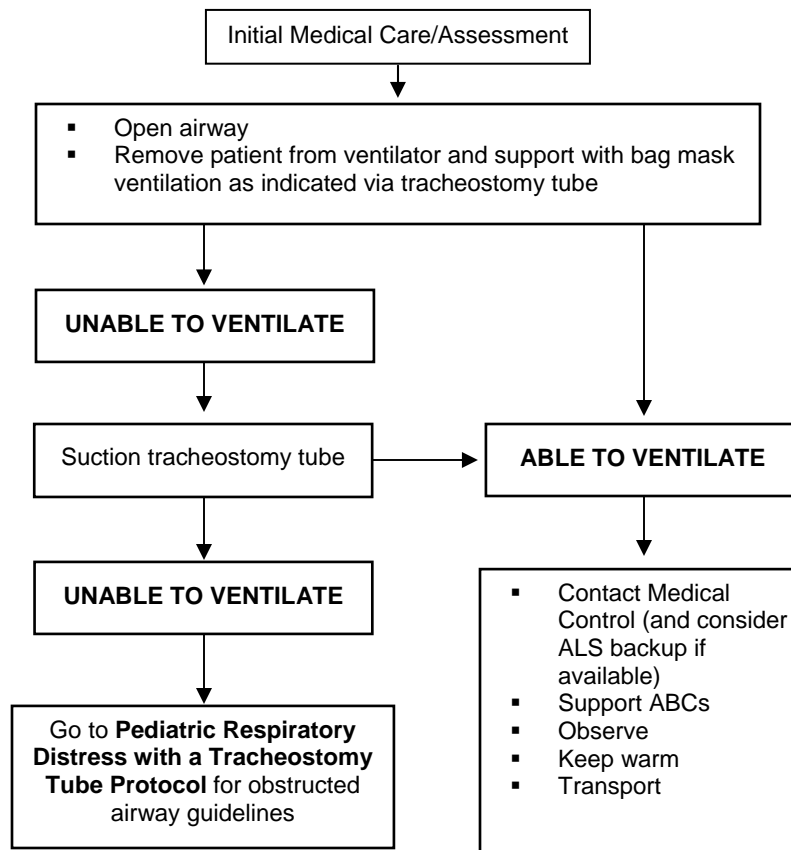
**Special Considerations:**

- Consider using parents/caregivers/home health nurses as medical resources at home and enroute.
- Consider alerting Medical Control of parent/caregiver participation in care.
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness.
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital.

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ILLINOIS EMSC  
PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR  
BLS CARE GUIDELINE



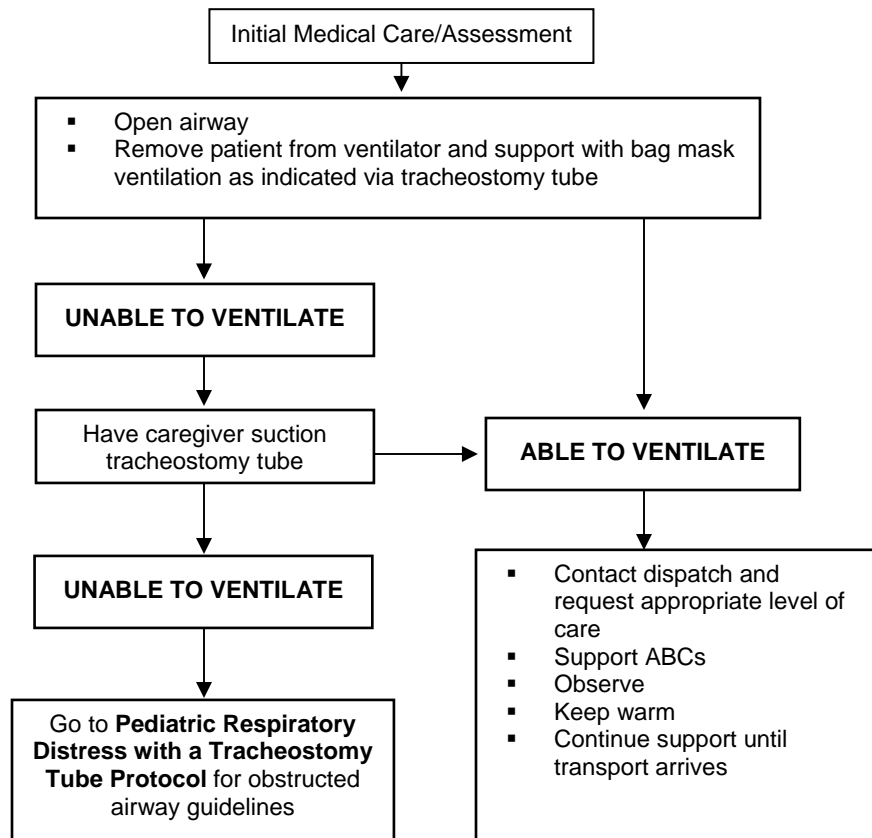
**Special Considerations:**

- Consider using parents/caregivers/home health nurses as medical resources at home and enroute.
- Consider alerting Medical Control of parent/caregiver participation in care.
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness.
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital.

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## ILLINOIS EMSC

### PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

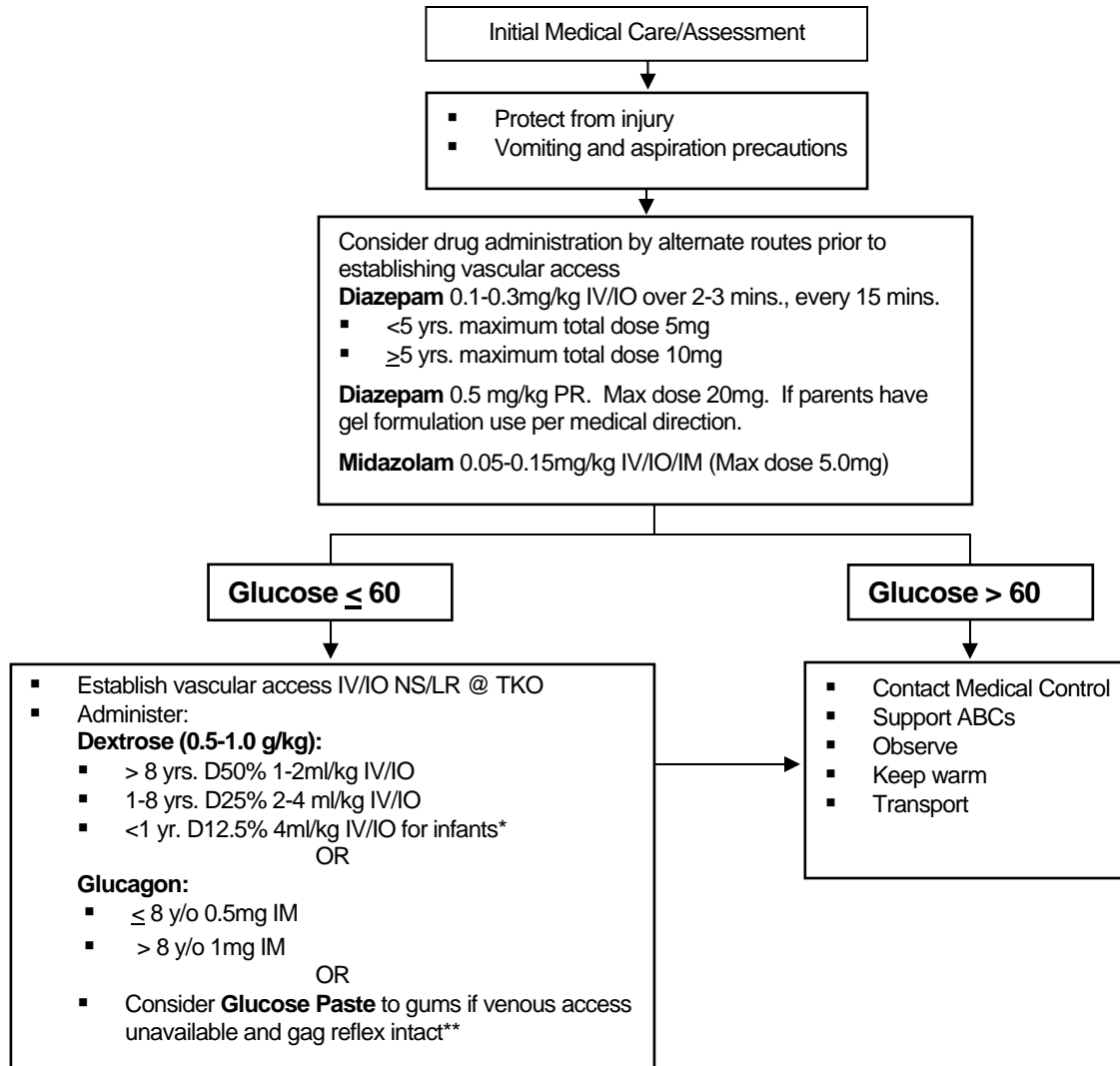


#### Special Considerations:

- Consider using parents/caregivers/home health nurses as medical resources at home and enroute.
- Consider alerting Medical Control of parent/caregiver participation in care.
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness.
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital.

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ILLINOIS EMSC  
PEDIATRIC SEIZURES  
ALS CARE GUIDELINE



**Special Considerations:**

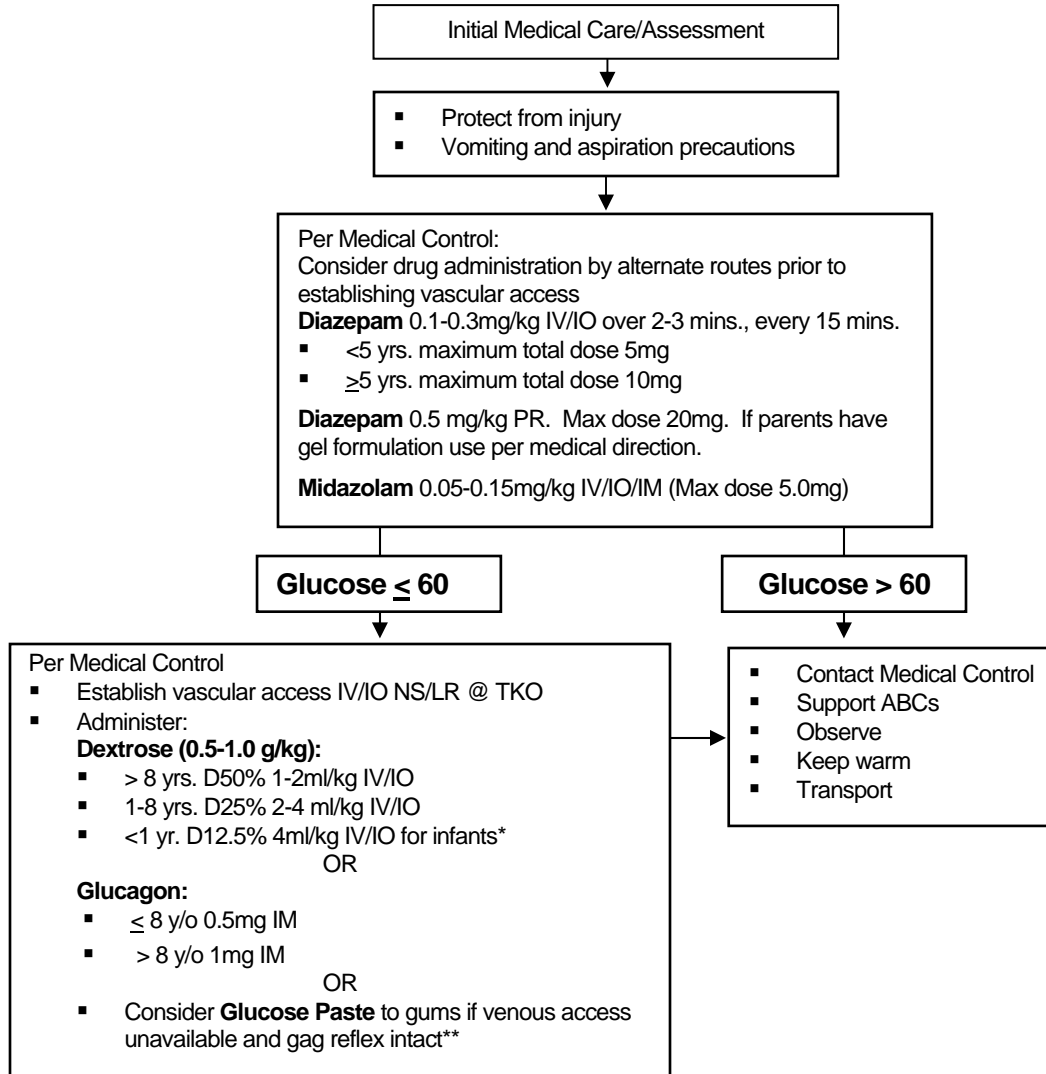
- Anticipate respiratory depression if **Diazepam** or **Midazolam** are administered
- Refer to **Respiratory Arrest Protocol** as indicated
- Parents may have given medication prior to EMS arrival, so watch for respiratory depression.

\*To make **D12.5%**, dilute **D25%** 1:1 with sterile water.

\*\*Examples of treatment for Hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC  
PEDIATRIC SEIZURES  
ILS CARE GUIDELINE



**Special Considerations:**

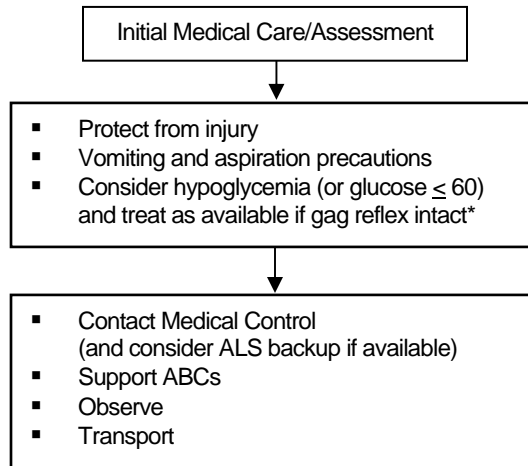
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ILLINOIS EMSC  
PEDIATRIC SEIZURES  
BLS CARE GUIDELINE



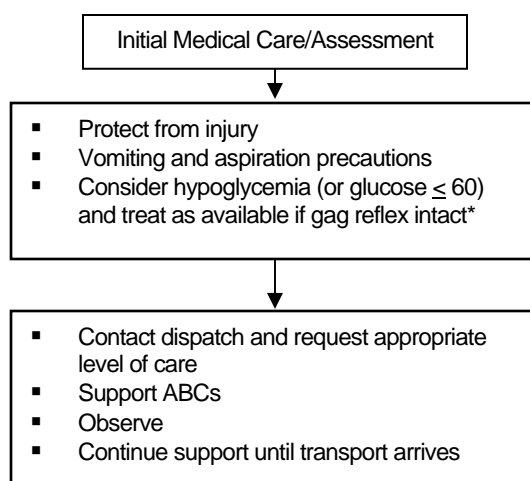
**Special Considerations:**

\*Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

- Refer to **Respiratory Arrest Protocol** as indicated.
- Parents may have given medication prior to EMS arrival, so watch for respiratory depression.
- Document medications administered prior to transport.
- If parents have Valium/Diazepam gel formulation, use per Medical Control direction.

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ILLINOIS EMSC  
PEDIATRIC SEIZURES  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



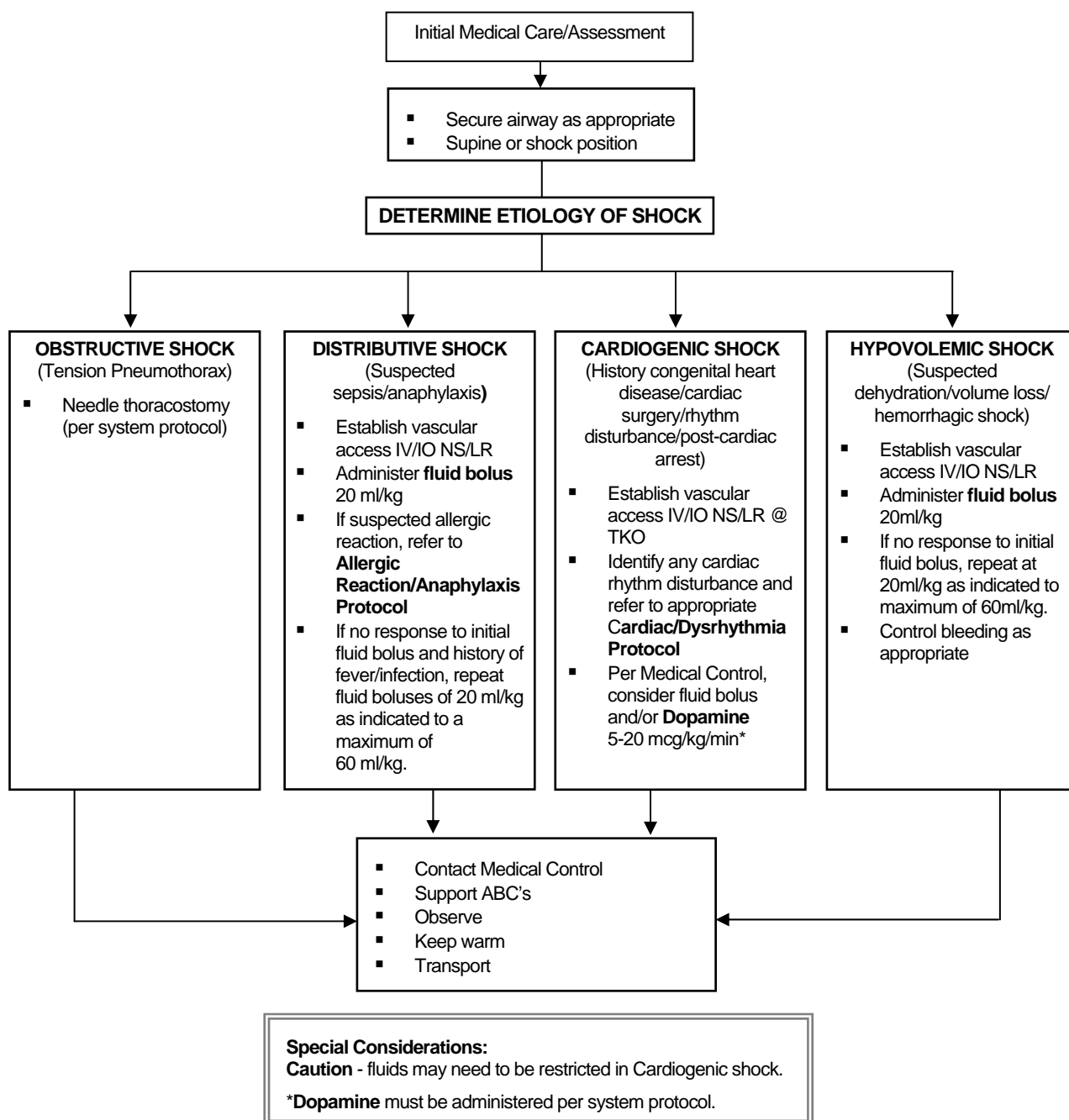
**Special Considerations:**

\*Examples of treatment for hypoglycemia if gag reflex intact: glucose paste, sugar, cake icing.

- Refer to **Respiratory Arrest Protocol** as indicated.
- Parents may have given medication prior to EMS arrival, so watch for respiratory depression.
- Document medications administered prior to transport.

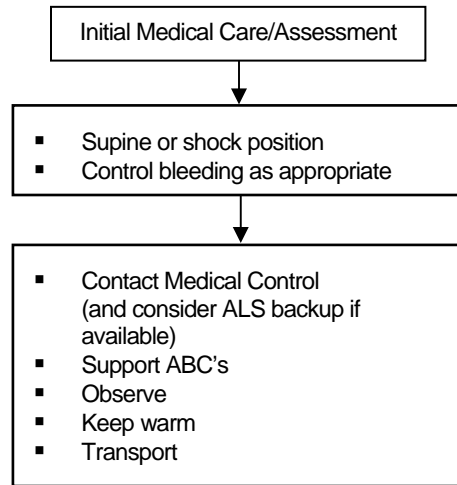
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ILLINOIS EMSC  
PEDIATRIC SHOCK  
ALS/ILS CARE GUIDELINE



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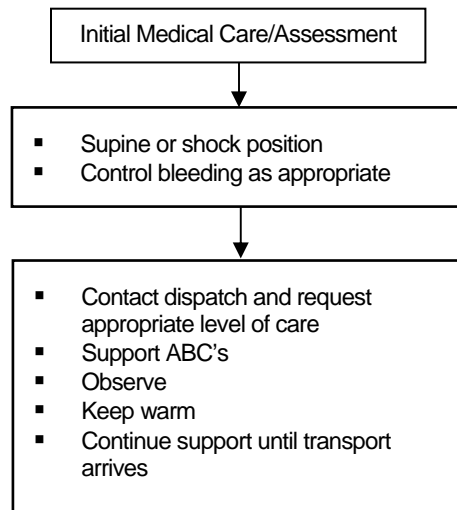
ILLINOIS EMSC  
PEDIATRIC SHOCK  
BLS CARE GUIDELINE



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ILLINOIS EMSC  
PEDIATRIC SHOCK  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

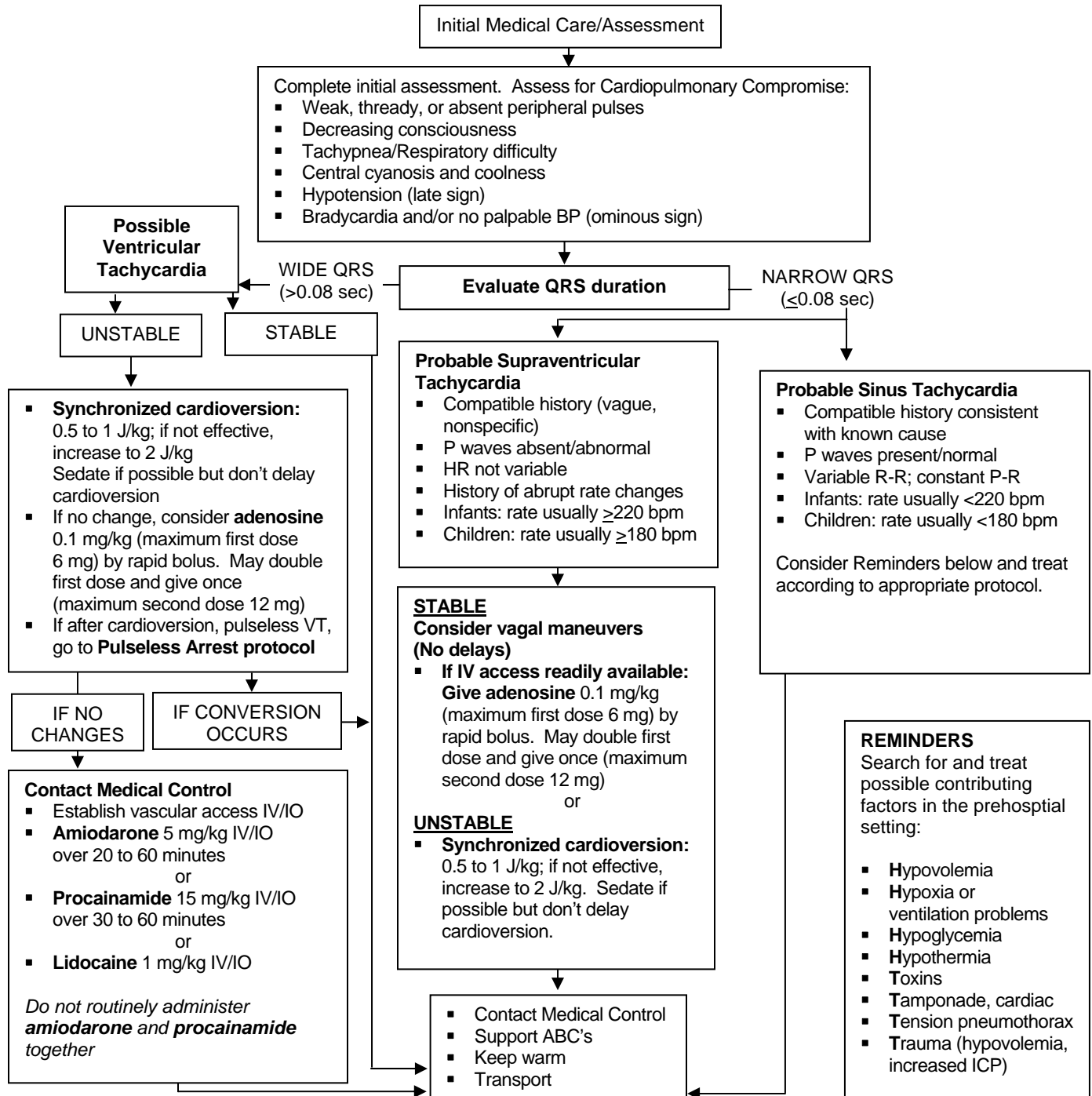


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# ILLINOIS EMSC

## TACHYCARDIA PROTOCOL

### ALS/ILS CARE GUIDELINE



#### Special Considerations:

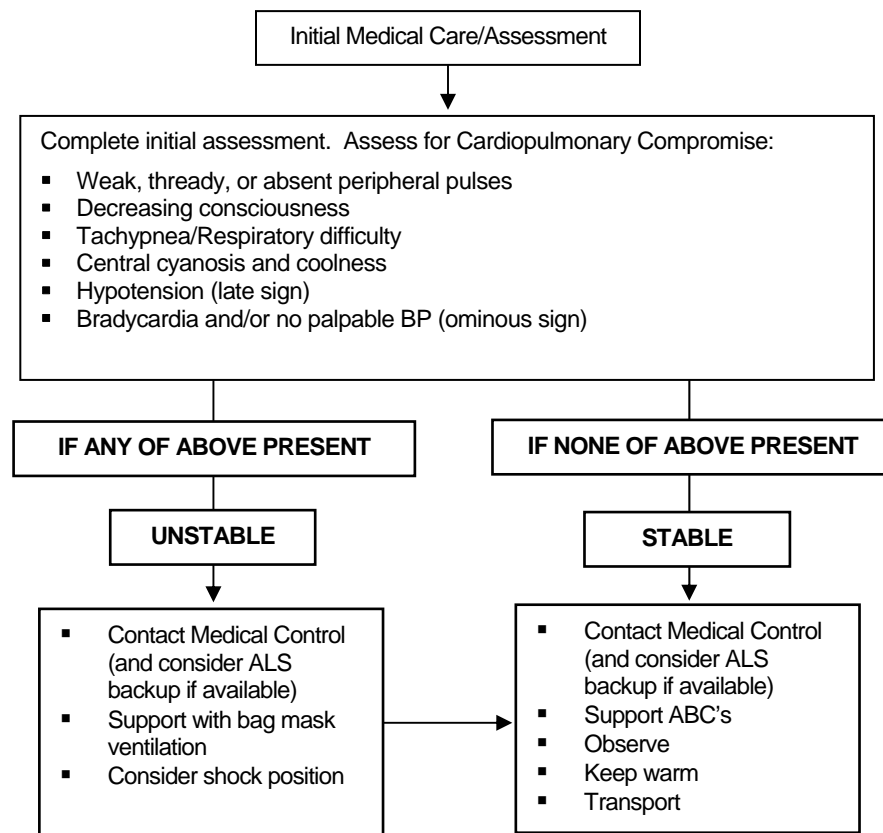
Attempt vagal stimulation first unless patient is very unstable and it does not delay chemical or electrical cardioversion. In infants and young children, apply ice to the face without occluding the airway. In older children, valsalva maneuvers are acceptable.

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# ILLINOIS EMSC

## TACHYCARDIA PROTOCOL

### BLS CARE GUIDELINE

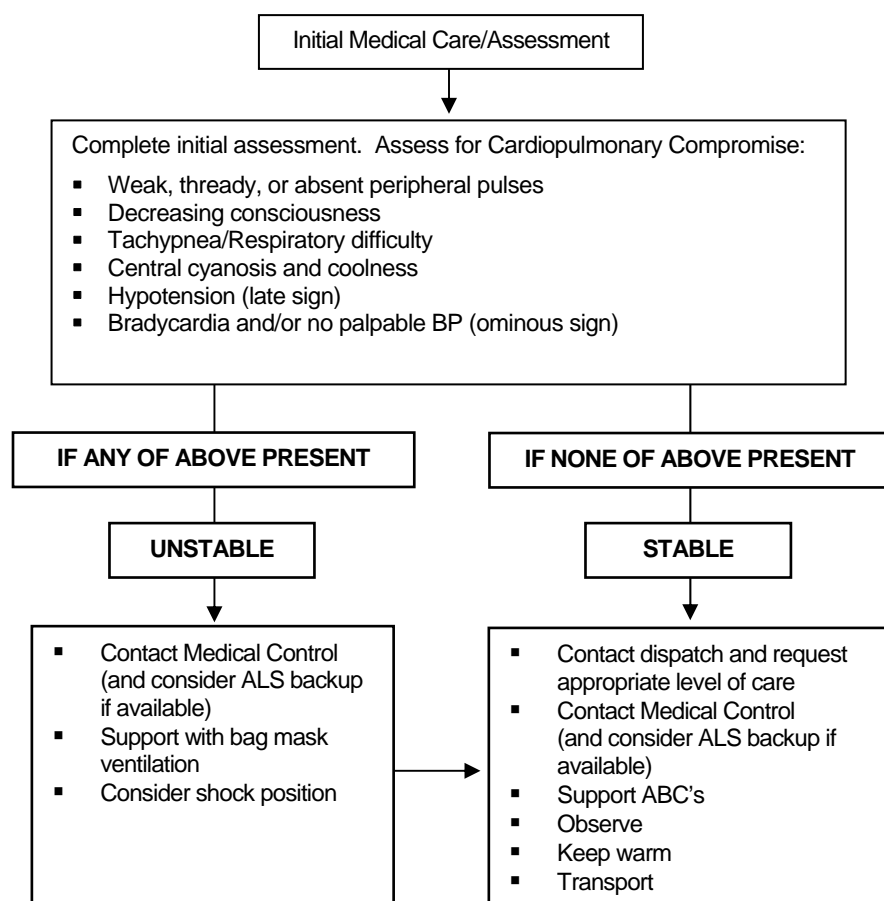


#### Special Considerations:

Be prepared for respiratory or cardiac arrest. Consider **AED**, **Pulseless Arrest** or **Respiratory Arrest** protocols.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC  
TACHYCARDIA PROTOCOL  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

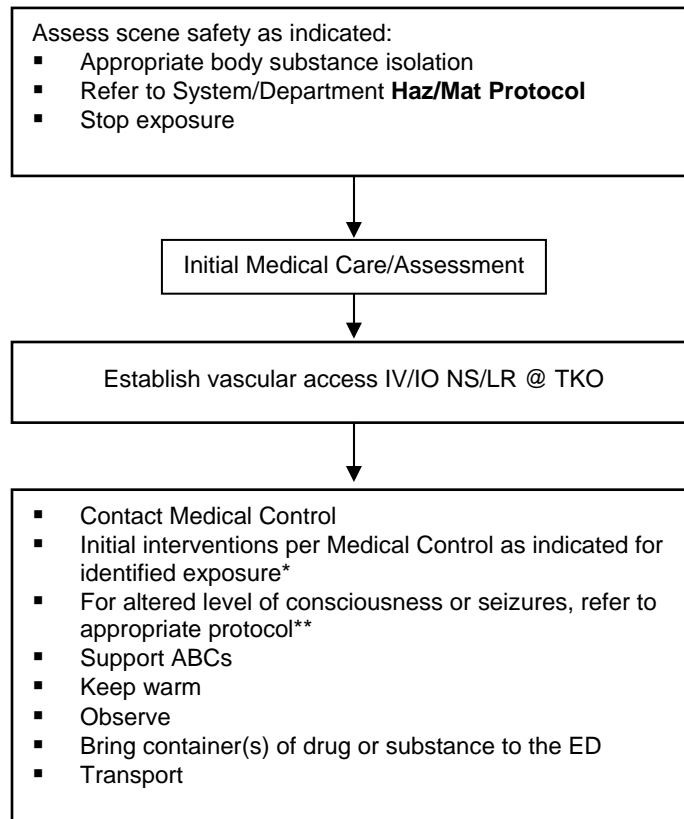


**Special Considerations:**

Be prepared for respiratory or cardiac arrest. Consider **AED, Pulseless Arrest** or **Respiratory Arrest protocols**.

The Illinois EMSC Prehospital Committee has exercised extreme caution that all information and drug dosages presented are accurate and in accordance with professional standards in effect at the time of publication. This prehospital care guideline may be modified at the discretion of the EMS Medical Director. It is recommended that care must be based on the child's clinical presentation, and on authorized policies and protocols.

ILLINOIS EMSC  
PEDIATRIC TOXIC EXPOSURES/INGESTIONS  
ALS/ILS CARE GUIDELINE



**Special Considerations:**

- Intubate for GCS <8
- Do not induce vomiting, especially in cases where caustic substance ingestion is suspected.
- Consider DCFS methamphetamine protocol.
- Poison Center phone # 1-800-222-1222

**\*REFER TO BACK OF PAGE FOR LIST OF POTENTIAL ANTIDOTES, INGESTIONS AND EXPOSURES.**

**\*\* Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols.**

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# EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES FOR ALS/ILS

## POTENTIAL TREATMENT

- For altered level of consciousness:
  - Weight  $\leq$  20 kg, administer Naloxone 0.1 mg/kg, IV/ IO/SQ/ IM, or 0.2 mg/kg ET
  - Weight > 20kg, administer Naloxone 2.0mg /dose
- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**
- Contact direct medical oversight for specific information about individual toxic exposures and treatments.
- Treatment for toxic exposures may be instituted as permitted by medical direction, including the following:
  - High-dose atropine for organophosphates
  - Sodium bicarbonate for tricyclic antidepressants
  - Glucagon for calcium channel blockers or beta-blockers
  - Diphenhydramine for dystonic reactions
  - Dextrose for insulin overdose

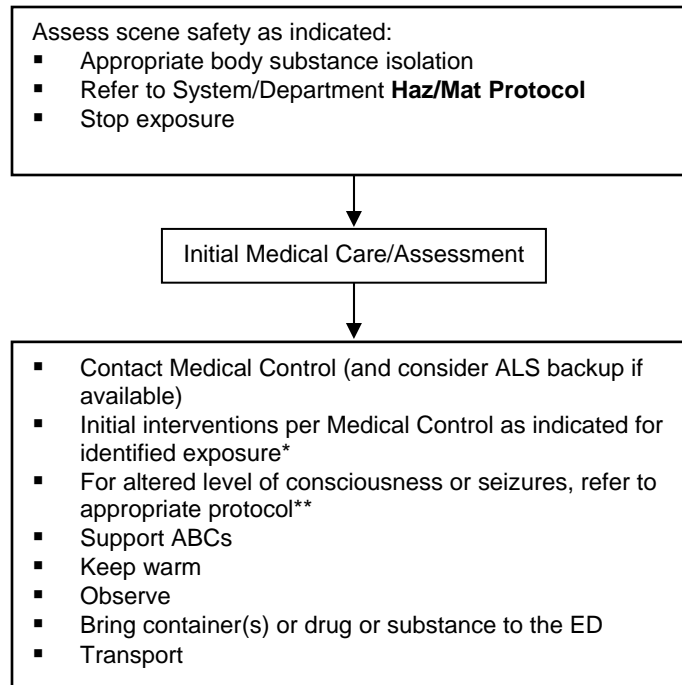
## POTENTIAL EXPOSURES

- |                                 |   |
|---------------------------------|---|
| ▪ Burning overstuffed furniture | = Cyanide                                     |
| ▪ Old burning buildings         | = Lead fumes and Carbon monoxide              |
| ▪ Pepto-Bismol™ like products   | = Aspirin                                     |
| ▪ Pesticides                    | = Organophosphates & Carbamates               |
| ▪ Common Plants                 | = Treat symptoms and bring plant/flower to ED |

## SMELLS

- |                 |  |
|-----------------|--|
| ▪ Almond        | = Cyanide                                |
| ▪ Fruit         | = Alcohol                                |
| ▪ Garlic        | = Arsenic, parathion, DMSO               |
| ▪ Mothballs     | = Camphor                                |
| ▪ Natural gas   | = Carbon monoxide                        |
| ▪ Rotten eggs   | = Hydrogen sulfide                       |
| ▪ Silver polish | = Cyanide                                |
| ▪ Stove gas     | = Think CO (CO and methane are odorless) |
| ▪ Wintergreen   | = Methyl salicylate                      |

ILLINOIS EMSC  
PEDIATRIC TOXIC EXPOSURES/INGESTIONS  
BLS CARE GUIDELINE



**Special Considerations:**

- Do not induce vomiting, especially in cases where caustic substance ingestion is suspected.
- Consider DCFS methamphetamine protocol.
- Poison Center phone # 1-800-222-1222

**\*Refer to back of page for list of potential ingestions and exposures.**

**\*\* Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols.**

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## EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES FOR BLS

### POTENTIAL TREATMENT

- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**
- Contact direct medical oversight for specific information about individual toxic exposures and treatments.

### POTENTIAL EXPOSURES

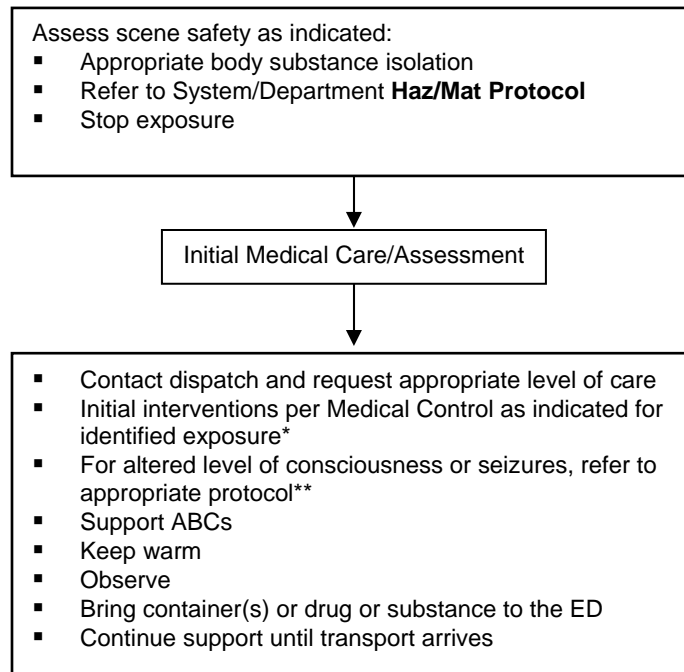
- |                                 |   |
|---------------------------------|---|
| ▪ Burning overstuffed furniture | = Cyanide                                     |
| ▪ Old burning buildings         | = Lead fumes and Carbon monoxide              |
| ▪ Pepto-Bismol™ like products   | = Aspirin                                     |
| ▪ Pesticides                    | = Organophosphates & Carbamates               |
| ▪ Common Plants                 | = Treat symptoms and bring plant/flower to ED |

### SMELLS

- |                 |  |
|-----------------|--|
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| ▪ Mothballs     | = Camphor                                |
| ▪ Natural gas   | = Carbon monoxide                        |
| ▪ Rotten eggs   | = Hydrogen sulfide                       |
| ▪ Silver polish | = Cyanide                                |
| ▪ Stove gas     | = Think CO (CO and methane are odorless) |
| ▪ Wintergreen   | = Methyl salicylate                      |



ILLINOIS EMSC  
PEDIATRIC TOXIC EXPOSURES/INGESTIONS  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



**Special Considerations:**

- Do not induce vomiting, especially in cases where caustic substance ingestion is suspected.
- Consider DCFS methamphetamine protocol.
- Poison Center phone # 1-800-222-1222

**\*Refer to back of page for list of potential ingestions and exposures.**

**\*\* Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols.**

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# EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES FOR EMERGENCY MEDICAL RESPONDER

## POTENTIAL TREATMENT

- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**
- Contact direct medical oversight for specific information about individual toxic exposures and treatments.

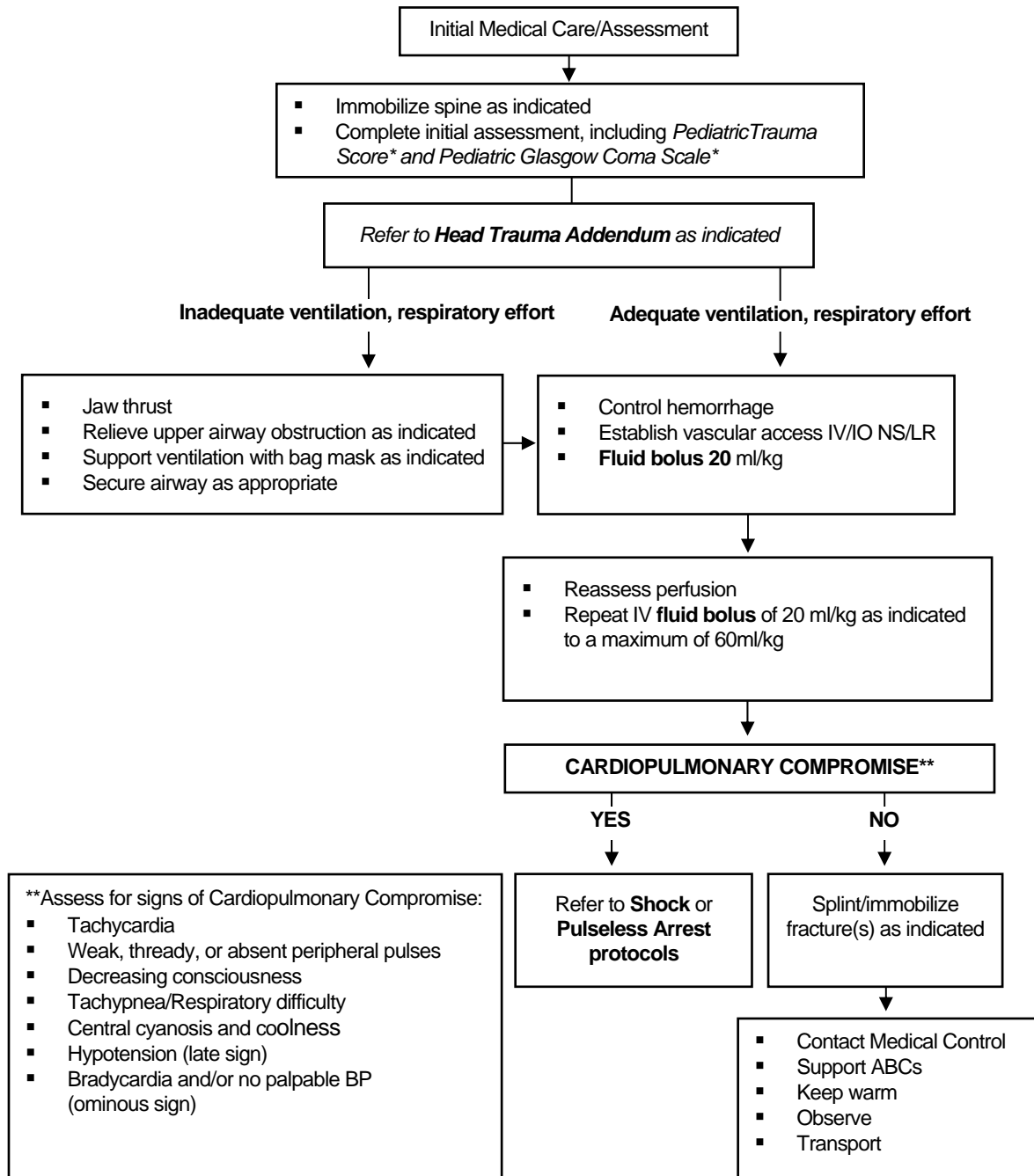
## POTENTIAL EXPOSURES

- |                                 |   |
|---------------------------------|---|
| ▪ Burning overstuffed furniture | = Cyanide                                     |
| ▪ Old burning buildings         | = Lead fumes and Carbon monoxide              |
| ▪ Pepto-Bismol™ like products   | = Aspirin                                     |
| ▪ Pesticides                    | = Organophosphates & Carbamates               |
| ▪ Common Plants                 | = Treat symptoms and bring plant/flower to ED |

## SMELLS

- |                 |  |
|-----------------|--|
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| ▪ Fruit         | = Alcohol                                |
| ▪ Garlic        | = Arsenic, parathion, DMSO               |
| ▪ Mothballs     | = Camphor                                |
| ▪ Natural gas   | = Carbon monoxide                        |
| ▪ Rotten eggs   | = Hydrogen sulfide                       |
| ▪ Silver polish | = Cyanide                                |
| ▪ Stove gas     | = Think CO (CO and methane are odorless) |
| ▪ Wintergreen   | = Methyl salicylate                      |

ILLINOIS EMSC  
PEDIATRIC TRAUMA  
ALS/ILS CARE GUIDELINE



**\*Refer to back of protocol for Pediatric Trauma Score and Pediatric Glasgow Coma Scale.**

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ILLINOIS EMSC  
PEDIATRIC TRAUMA  
ALS/ILS CARE GUIDELINE

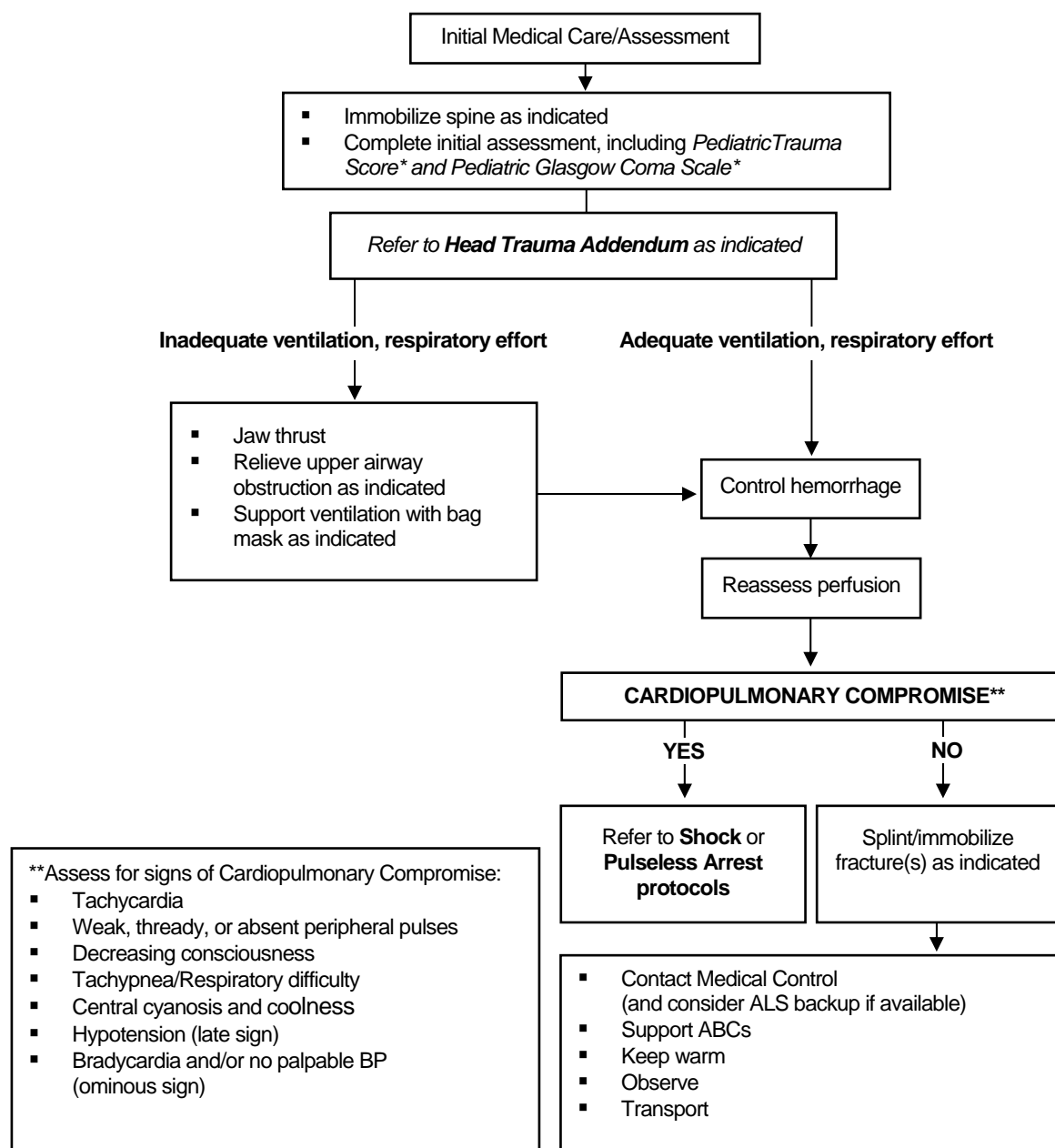
PEDIATRIC GLASGOW COMA SCALE (PGCS)				
	> 1 Year		< 1 Year	Score
EYE OPENING	Spontaneously		Spontaneously	4
	To verbal command		To shout	3
	To pain		To pain	2
	No response		No response	1
MOTOR RESPONSE	Obeys		Spontaneous	6
	Localizes pain		Localizes pain	5
	Flexion-withdrawal		Flexion-withdrawal	4
	Flexion-abnormal (decorticate rigidity)		Flexion-abnormal (decorticate rigidity)	3
	Extension (decerebrate rigidity)		Extension (decerebrate rigidity)	2
	No response		No response	1
	> 5 Years	2-5 Years	0-23 months	
VERBAL RESPONSE	Oriented	Appropriate words/phrases	Smiles/coos appropriately	5
	Disoriented/confused	Inappropriate words	Cries and is consolable	4
	Inappropriate words	Persistent cries and screams	Persistent inappropriate crying and/or screaming	3
	Incomprehensible sounds	Grunts	Grunts, agitated, and restless	2
	No response	No response	No response	1
TOTAL PEDIATRIC GLASGOW COMA SCORE:				(3-15)

PEDIATRIC TRAUMA SCORE (PTS)			
Component	+ 2	+ 1	- 1
Size	Child/adolescent > 20 kg	Toddler 11 – 20 kg	Infant ≤ 10 kg
Airway	Normal	Maintainable	Unmaintained or Intubated
Systolic BP	> 90 mmHg	50 – 90 mmHg	< 50 mmHg
CNS	Awake	Obtunded/Lost consciousness	Coma/Unresponsive
Skeletal Injury	None	Closed Fracture	Open/Multiple Fractures
Open Wounds	None	Minor	Major/Penetrating

If a proper sized blood pressure cuff is not available, blood pressure can be rated as:  
+ 2 = palpable at wrist, + 1 = palpable at groin, - 1 = no pulse palpable

**A PTS of ≤ 8 indicates the need for evaluation at a Trauma Center.**  
Score range is from – 6 to + 12.

ILLINOIS EMSC  
PEDIATRIC TRAUMA  
BLS CARE GUIDELINE



**\*Refer to back of protocol for Pediatric Trauma Score and Pediatric Glasgow Coma Scale.**

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ILLINOIS EMSC  
PEDIATRIC TRAUMA  
BLS CARE GUIDELINE

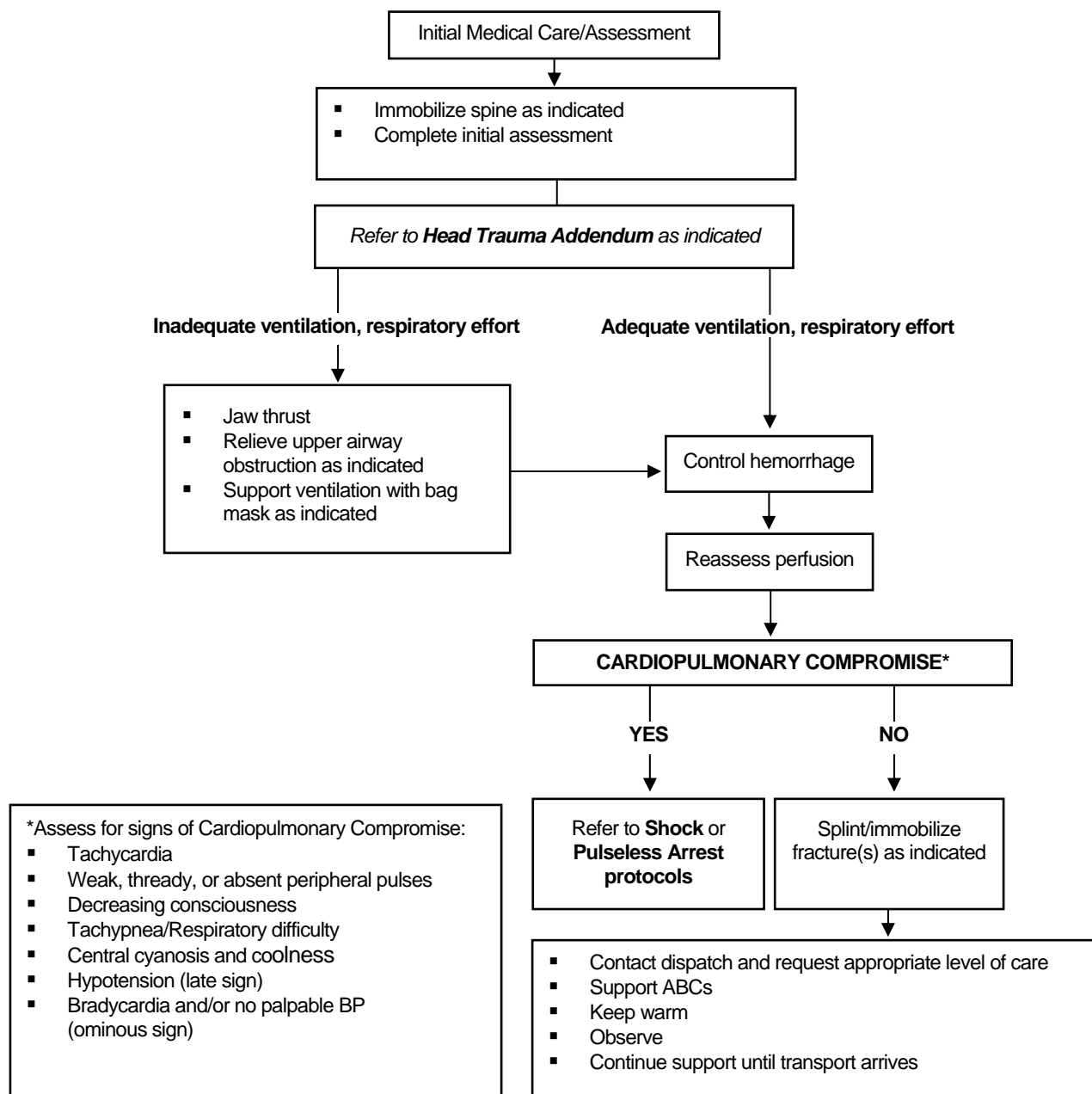
PEDIATRIC GLASGOW COMA SCALE (PGCS)				
	> 1 Year		< 1 Year	Score
<b>EYE OPENING</b>	Spontaneously		Spontaneously	4
	To verbal command		To shout	3
	To pain		To pain	2
	No response		No response	1
<b>MOTOR RESPONSE</b>	Obeys		Spontaneous	6
	Localizes pain		Localizes pain	5
	Flexion-withdrawal		Flexion-withdrawal	4
	Flexion-abnormal (decorticate rigidity)		Flexion-abnormal (decorticate rigidity)	3
	Extension (decerebrate rigidity)		Extension (decerebrate rigidity)	2
	No response		No response	1
	> 5 Years	2-5 Years	0-23 months	
<b>VERBAL RESPONSE</b>	Oriented	Appropriate words/phrases	Smiles/coos appropriately	5
	Disoriented/confused	Inappropriate words	Cries and is consolable	4
	Inappropriate words	Persistent cries and screams	Persistent inappropriate crying and/or screaming	3
	Incomprehensible sounds	Grunts	Grunts, agitated, and restless	2
	No response	No response	No response	1
<b>TOTAL PEDIATRIC GLASGOW COMA SCORE:</b>				<b>(3-15)</b>

PEDIATRIC TRAUMA SCORE (PTS)			
Component	+ 2	+ 1	- 1
<b>Size</b>	Child/adolescent > 20 kg	Toddler 11 – 20 kg	Infant ≤ 10 kg
<b>Airway</b>	Normal	Maintainable	Unmaintained or Intubated
<b>Systolic BP</b>	> 90 mmHg	50 – 90 mmHg	< 50 mmHg
<b>CNS</b>	Awake	Obtunded/Lost consciousness	Coma/Unresponsive
<b>Skeletal Injury</b>	None	Closed Fracture	Open/Multiple Fractures
<b>Open Wounds</b>	None	Minor	Major/Penetrating

If a proper sized blood pressure cuff is not available, blood pressure can be rated as:  
**+ 2** = palpable at wrist, **+ 1** = palpable at groin, **- 1** = no pulse palpable

**A PTS of ≤ 8 indicates the need for evaluation at a Trauma Center.**  
 Score range is from – 6 to + 12.

ILLINOIS EMSC  
PEDIATRIC TRAUMA  
EMERGENCY MEDICAL RESPONDER CARE GUIDELINE

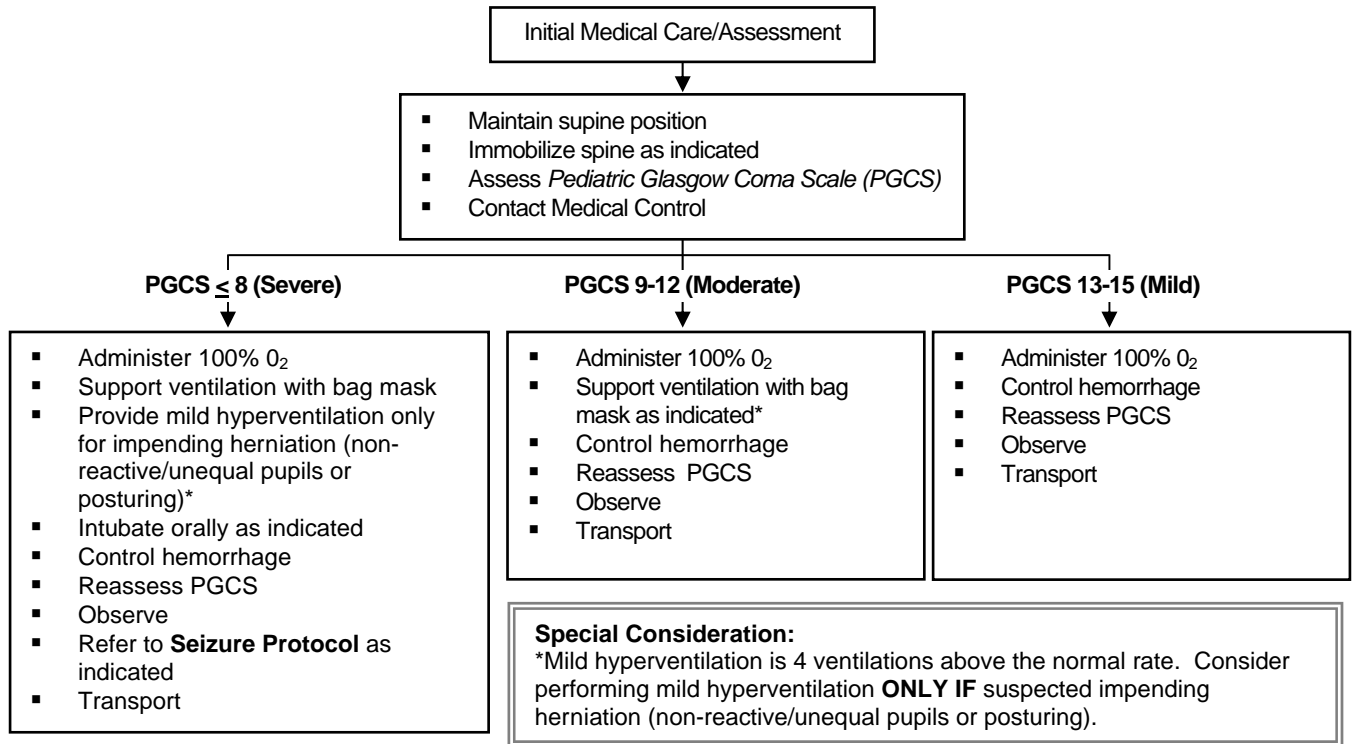


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# ILLINOIS EMSC

## HEAD TRAUMA ADDENDUM

### PEDIATRIC ALS/ILS



PEDIATRIC GLASGOW COMA SCALE (PGCS)				
	> 1 Year		< 1 Year	Score
<b>EYE OPENING</b>	Spontaneously		Spontaneously	4
	To verbal command		To shout	3
	To pain		To pain	2
	No response		No response	1
<b>MOTOR RESPONSE</b>	Obeys		Spontaneous	6
	Localizes pain		Localizes pain	5
	Flexion-withdrawal		Flexion-withdrawal	4
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	Incomprehensible sounds	Grunts	Grunts, agitated, and restless	2
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<b>TOTAL PEDIATRIC GLASGOW COMA SCORE:</b>				<b>(3-15)</b>

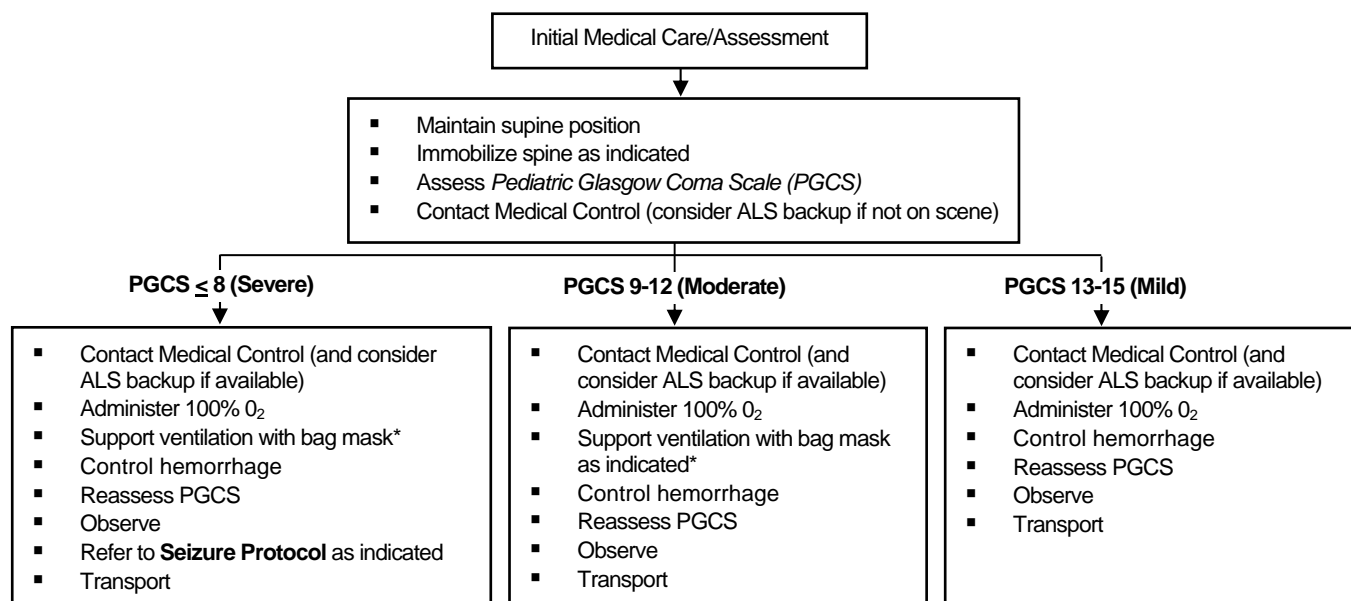
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# ILLINOIS EMSC

## HEAD TRAUMA ADDENDUM

### PEDIATRIC BLS



#### Special Consideration:

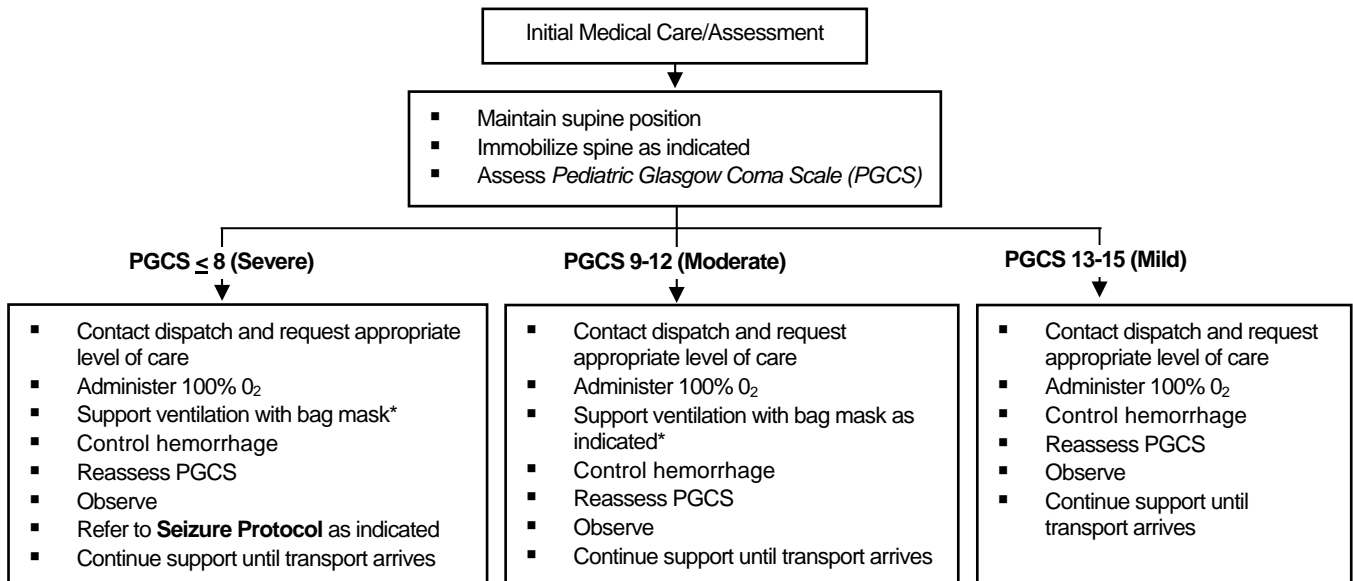
\*Mild hyperventilation is 4 ventilations above the normal rate. Consider performing mild hyperventilation **ONLY IF** suspected impending herniation (non-reactive/unequal pupils or posturing).

#### PEDIATRIC GLASGOW COMA SCALE (PGCS)

	> 1 Year		< 1 Year	Score
<b>EYE OPENING</b>	Spontaneously		Spontaneously	4
	To verbal command		To shout	3
	To pain		To pain	2
	No response		No response	1
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	No response	No response	No response	1
<b>TOTAL PEDIATRIC GLASGOW COMA SCORE:</b>				<b>(3-15)</b>

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ILLINOIS EMSC  
HEAD TRAUMA ADDENDUM  
PEDIATRIC EMERGENCY MEDICAL RESPONDER



**Special Consideration:**

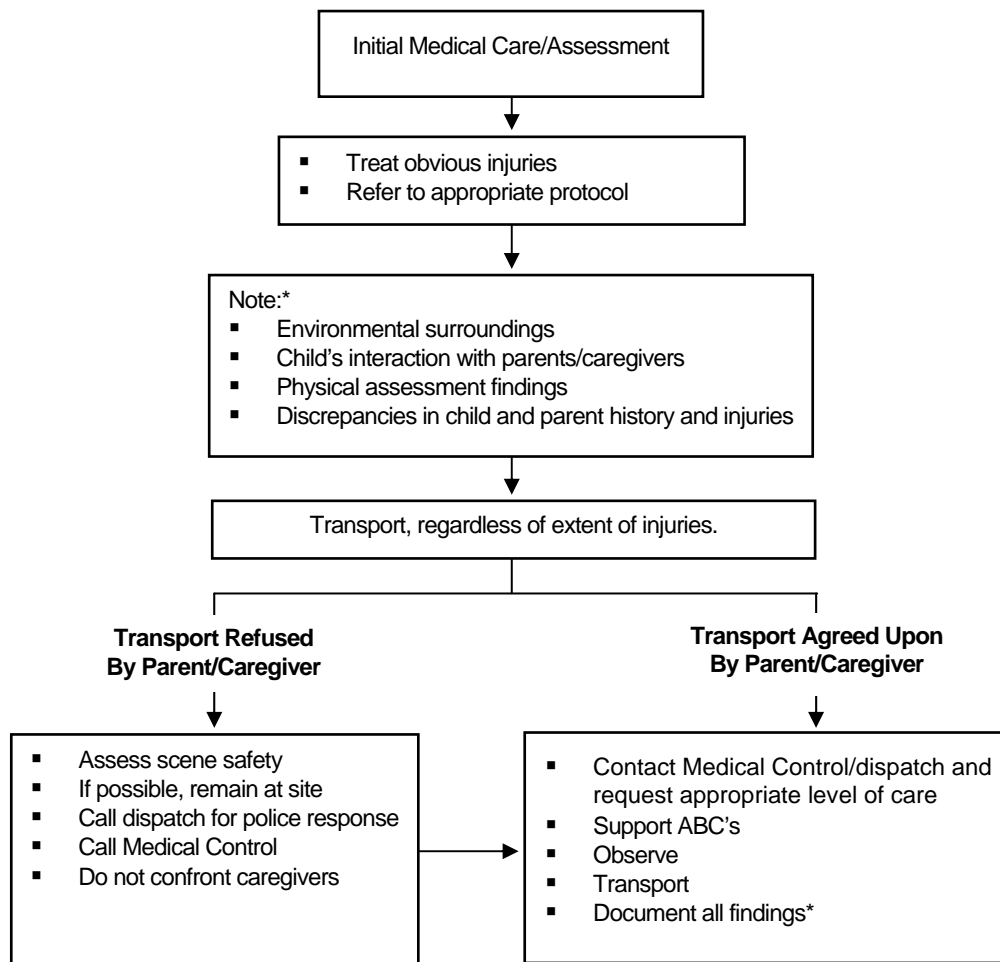
\*Mild hyperventilation is 4 ventilations above the normal rate. Consider performing mild hyperventilation **ONLY IF** suspected impending herniation (non-reactive/unequal pupils or posturing).

**PEDIATRIC GLASGOW COMA SCALE (PGCS)**

	> 1 Year		< 1 Year	Score
<b>EYE OPENING</b>	Spontaneously		Spontaneously	4
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	> 5 Years	2-5 Years	0-23 months	
<b>VERBAL RESPONSE</b>	Oriented	Appropriate words/phrases	Smiles/coos appropriately	5
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	No response	No response	No response	1
<b>TOTAL PEDIATRIC GLASGOW COMA SCORE:</b>				<b>(3-15)</b>

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ILLINOIS EMSC  
SUSPECTED CHILD ABUSE AND NEGLECT  
ALS/ILS/BLS/EMERGENCY MEDICAL RESPONDER CARE GUIDELINE



**REPORT SUSPICIONS TO ED PHYSICIAN, ED CHARGE NURSE AND DCFS (1-800-25-ABUSE). WHEN CONTACTING DCFS, IDENTIFY SELF AS A STATE MANDATED REPORTER TO EXPEDITE PROCESS.**

\*Refer to back of page for special considerations.

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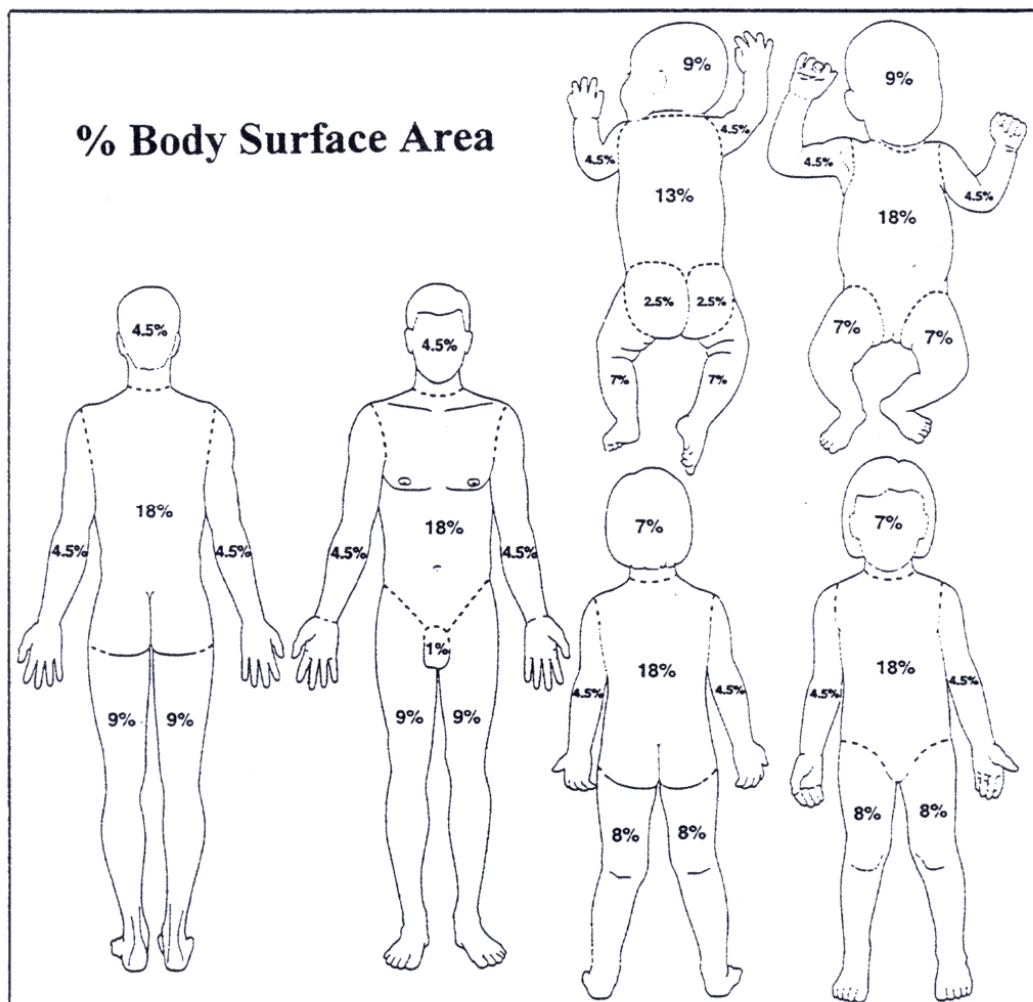
## **SPECIAL CONSIDERATIONS:**

1. You are required by law to report your suspicions.
2. Document findings objectively:
  - Body location of the injury
  - Severity of the injury
  - Patterns of similar injury over time
  - Include verbatim statements offered by the child
  - Note verbatim statements from the parent/caregiver
3. Suspect battered or abused child if any of the following is found:
  - A discrepancy exists between history of injury and physical exam.
  - Caregiver provides a changing or inconsistent history.
  - There is a prolonged interval between injury and the seeking of medical help.
  - Child has a history of repeated trauma.
  - Caregiver responds inappropriately or does not comply with medical advice.
  - Suspicious injuries are present, such as:
    - injuries of soft tissue areas, including the face, neck and abdomen,
    - injuries of body areas that are normally shielded, including the back and chest,
    - fractures of long bones in children under 3 years of age,
    - old scars, or injuries in different stages of healing,
    - bizarre injuries, such as bites, cigarette burns, rope marks, imprint of belt or other object,
    - trauma of genital or perianal areas,
    - sharply demarcated burns in unusual areas,
    - scalds that suggest child was dipped into hot water.
4. The following are some common forms of neglect:
  - Environment is dangerous to the child (e.g., weapons within reach, playing near open windows without screen/guards, perilously unsanitary conditions, etc.).
  - Caretaker has not provided, or refuses to permit medical treatment of child's acute or chronic life-threatening illness, or of chronic illness, or fails to seek necessary and timely medical care for child.
  - Child under the age of 10 has been left unattended or unsupervised. (Although in some situations children under 10 years of age may be left alone without endangerment, EMS personnel cannot make such determinations.) All instances should be reported for DCFS investigation.
  - Abandonment
  - Caretaker appears to be incapacitated (e.g., extreme drug/alcohol intoxication, disabling psychiatric symptoms, severe illness) and cannot meet child's care requirements.
  - Child appears inadequately fed (e.g., seriously underweight, emaciated, or dehydrated) inadequately clothed, or inadequately sheltered.
  - Child is found to be intoxicated or under the influence of an illicit substance(s).

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# Resources

# BURN RESOURCE



Palm of hand (including fingers) of infant or child = 1% of the total body surface

Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center. Listed below is the American Burn Association criteria for pediatric patients to be transported to a burn center.

1. Partial thickness burns of greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns (including lightning injury)
5. Chemical burns
6. Inhalation injury
7. Burn injury in patient with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention

# TOXIC EXPOSURES/INGESTIONS RESOURCE

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## EXPOSURE TO OR INGESTION OF NARCOTICS OR UNKNOWN SUBSTANCES

### POTENTIAL TREATMENT

- For altered level of consciousness:
  - Weight  $\leq$  20 kg, administer Naloxone 0.1 mg/kg, IV/ IO/SQ/ IM, or 0.2 mg/kg ET
  - Weight > 20kg, administer Naloxone 2.0mg /dose
- **DO NOT INDUCE VOMITING, ESPECIALLY IN CASES WHERE CAUSTIC SUBSTANCE INGESTION IS SUSPECTED.**
- Contact direct medical oversight for specific information about individual toxic exposures and treatments.
- Treatment for toxic exposures may be instituted as permitted by medical direction, including the following:
  - High-dose atropine for organophosphates
  - Sodium bicarbonate for tricyclic antidepressants
  - Glucagon for calcium channel blockers or beta-blockers
  - Diphenhydramine for dystonic reactions
  - Dextrose for insulin overdose

### POTENTIAL EXPOSURES

- |                                 |   |
|---------------------------------|---|
| ▪ Burning overstuffed furniture | = Cyanide                                     |
| ▪ Old burning buildings         | = Lead fumes and Carbon monoxide              |
| ▪ Pepto-Bismol™ like products   | = Aspirin                                     |
| ▪ Pesticides                    | = Organophosphates & Carbamates               |
| ▪ Common Plants                 | = Treat symptoms and bring plant/flower to ED |

### SMELLS

- |                 |  |
|-----------------|--|
| ○ Almond        | = Cyanide                                |
| ○ Fruit         | = Alcohol                                |
| ○ Garlic        | = Arsenic, parathion, DMSO               |
| ○ Mothballs     | = Camphor                                |
| ○ Natural gas   | = Carbon monoxide                        |
| ○ Rotten eggs   | = Hydrogen sulfide                       |
| ○ Silver polish | = Cyanide                                |
| ○ Stove gas     | = Think CO (CO and methane are odorless) |
| ○ Wintergreen   | = Methyl salicylate                      |

# VITAL SIGNS AND CARDIOPULMONARY COMPROMISE RESOURCE

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## ***Vital Sign/Age Parameters***

Age	Pulse	Systolic Blood Pressure	Respiratory Rate
Neonate (0-30 days)	100 - 180	50 - 90	30 - 60
Infant (31 days – < 1yr)	100 - 160	60 - 100	24 - 50
Toddler (1 yr - < 3 yrs)	90 - 150	80 - 105	24 - 40
Pre-School (3yrs – < 5 yrs)	80 - 140	95 - 105	20 - 30
School Age (5 yrs – 12 yrs)	65 - 120	95 - 120	18 - 30
Adolescent (> 12 yrs)	60 - 100	100 - 128	12 - 20

Adapted from the following references:

- American Heart Assn, *Pediatric Advanced Life Support* manual, 2002.
- Gunn V & Nechyba C, *The Harriet Lane Handbook*, 16<sup>th</sup> edition, 2002.
- Hazinski MF editor, *Nursing Care of the Critically Ill Child*, 1999.
- Hugh D, et al, *Moss and Adams' Heart Disease in Infants, Children, and Adolescents : Including the Fetus and Young Adult*, 6<sup>th</sup> edition, 2001.
- Behrman R, *Nelson Textbook of Pediatrics*, 16<sup>th</sup> edition, 2000.
- Park M, *Pediatric Cardiology for Practitioners*, 4th edition, 2002.
- Schafermeyer R, Pediatric Trauma, *Emergency Medicine Clinics of North America*, vol 11, no 1, 1993.

## ***Indicators of Cardiopulmonary Compromise in Children***

- Tachycardia
- Weak, thready, or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)
- Bradycardia and/or no palpable BP (ominous sign)



# RESOURCES

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1. Hazinski MF, Chameides L, Elling B, Hemphill R, eds. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 12: *Pediatric Advanced Life Support*. *Circulation* 2005;112,(24): IV 167 – IV 187.
2. Hazinski MF, Chameides L, Elling B, Hemphill R, eds. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 11: *Pediatric Basic Life Support*. *Circulation* 2005; 112 (24): IV 156 - IV166.
3. Hazinski MF, Chameides L, Elling B, Hemphill R, eds. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 13: *Neonatal Resuscitation Guidelines*. *Circulation*, 2005; 112 (24): IV 188 – IV 195.
4. *Neonatal Resuscitation Textbook*, 5<sup>th</sup> ed. Kattwinkel J ed. American Academy of Pediatrics and the American Heart Association. 2006.
5. New York State Emergency Medical Services for Children. *Special Health Care Needs Reference Card*, 2003.
6. *Pediatric Education for Prehospital Professionals*, 2<sup>nd</sup> Edition. American Academy of Pediatrics. Dieckmann RA ed., Sudbury, MA.; Jones & Bartlett Publishers, 2006.
7. Foltin, G, et al. *TRIPP: Teaching Resource for Instructors in Prehospital Pediatrics*. The Center for Pediatric Emergency Medicine, 2<sup>nd</sup> Edition, 2001.
8. *Special Children's Outreach and Prehospital Education*. Adirim TA, Smith E, ed. Sudbury, MA: Jones and Bartlett Publishers, 2006.